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On the cover:
Sgt. 1st Class Wayne Reinhardt, Army Engineer School senior training and developer writer for firefighters, Fort Leonard Wood, Mo., has been selected as the Army Military Fire Officer of the Year. Photo by Sbatara Seymour.

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BRAC to close 15 major installations, improve Army efficiency

by Eric W Cramer

The Army will close 15 major installations over the next six years and close or realign hundreds of small installations, including Army Reserve and National Guard facilities, if DoD Base Realignment and Closure recommendations released today receive final approval.

Major Army installations slated for closure are: Fort Monroe, Va.; Fort McPherson, Ga.; Fort Gillem, Ga.; Fort Monmouth, N.J.; Newport Chemical Depot, Ind.; Kansas Army Ammunition Plant, Kan.; Selfridge Army Activity, Mich.; Mississippi Army Ammunition Plant; Hawthorne Army Depot, Nev.; Umatilla Chemical Depot, Ore.; Lone Star Army Ammunition Plant, Texas; Red River Army Depot, Texas; Deseret Chemical Depot, Utah; Riverbank Army Ammunition Plant, Calif.; and Charles E. Kelly Support Center, Pa.

In addition to closing these installations, the current plan would close 176 Army Reserve and 211 Army National Guard facilities. These will be replaced by 125 multi-component Armed Forces Reserve Centers.

The changes are part of a total BRAC package expected to save the Department of Defense about \$50 billion over the next two decades, officials said.

Gen. Richard Cody, vice chief of staff for the Army, said the changes to the reserve-component structure are designed to bring the Army Reserve and National Guard in line with the Army's new modular, unit-of-action structure.

Lt. Gen. H. Steven Blum, chief of the Army National Guard Bureau, said the changes in the Guard and Reserve centers will not only lead to better efficiency within the units, but will also lead to improved recruitment.

"We hope it will affect recruitment and retention in a positive way," Blum said. "By divesting ourselves of some of the more remote facilities and moving to areas with

better demographics, it should allow for positive change."

The BRAC proposal also calls for a change in location for a number of large commands and Army functions. Among these is the relocation of the Armor Center, currently at Fort Knox, Ky., to Fort Benning, Ga., to become part of a new Maneuver Center there.

"What Knox gets in return," Cody said, "is we'll activate a modular brigade combat team there. Accessions Command will go there and the Cadet Command. Human Resources will move out of [leased] space and go to Fort Knox. We're also moving an air defense artillery brigade from Fort Bliss, Texas, to Fort Sill (Okla.) to create a Fires Center."

Training and Doctrine Command will move from Fort Monroe, Va., to Fort Eustis, Va., as Fort Monroe closes under the current BRAC proposal, Cody said. Among many other changes, the BRAC proposal:

- Relocates Army Materiel Command headquarters to Redstone Arsenal, Ala.
- Relocates the 7th Special Forces Group from Fort Bragg, N.C., to Eglin Air Force Base, Fla.
- Relocates Forces Command Headquarters and U.S. Army Reserve Command to Pope Air Force Base, N.C.
- Stations Third Army headquarters with the Air Force component of U.S. Forces Central Command at Shaw Air Force Base, S.C.
- Moves the Installation Management Agency headquarters to Fort Sam Houston, Texas.
- Activates modular BCTs at Fort Bliss, Texas; Fort Bragg, N.C.; Fort Knox, Ky.; and Fort Riley, Kan.
- Creates a new medical hospital and research facility, the Walter Reed National Military Medical Center in Bethesda, Md., and builds a new 165-bed hospital at Fort Belvoir, Va.



Fort Monroe, Va., will be one of 15 major Army installations to close if DoD Base Realignment and Closure recommendations receive final approval. Built following the War of 1812 to protect the Hampton Roads shipping lanes, Fort Monroe still retains its casemate walls and moat, evident on the right of this aerial shot.

Whether these changes are approved depends on actions by the BRAC commission, said Michael Wynne, assistant under-secretary of defense for acquisition, technology and logistics.

The commission, made up of former legislators and military experts, will forward its recommendations to the president after reviewing the Department of Defense recommendations. It must take action by Sept. 8. The president will then have until Sept. 23 to accept or reject the recommendations in their entirety. If accepted, Congress then has 45 days to reject the recommendations before they become binding.

Specific changes must begin within two years of the recommendation's acceptance, and must be complete within six years, without interrupting ongoing operations, Wynn said.

More details regarding the changes are available at www.hqda.army.mil/acsim/brac/braco.htm. They are also available from the Department of Defense Web site at: www.defenselink.mil/brac.

Eric Cramer writes for the Army News Service.

PWD



Facilities operations in wake of BRAC 2005 Report

by David Williams

On 13 May 2005, the Department of Defense released its Base Realignment and Closure (BRAC) Report. The Army had several installations recommended for closure and realignment. Although the recommendations must be discussed, evaluated and ultimately approved by Congress and the President before they become law, Army facilities operations continue. Therefore, guidance must be provided to ensure we are operating in the best interest of the Army.

The Facilities Policy Division, OACSIM, has proposed the following guidelines for facilities operations at installations recommended for closure and realignment.

Military Construction, Army (MCA):

For installations recommended for closure and realignment, OACSIM has identified projects as either under construction or under design/pending award. Once approved, a list of those projects will be provided. Once received, installations must perform a critical review of all projects. Any discrepancies on the list should be reported immediately to OACSIM.

Upon review, installations must provide the Construction Division of OACSIM justification that supports each project no later than 31 Aug 05. OACSIM will review installation justifications and submit recommendations to the Deputy Assistant Secretary of the Army for Installations and Housing (DASA (IH)). The U.S. Army Corps of Engineers (USACE) must update the percent of complete construction and Beneficial Occupancy Date (BOD) data and immediately contact the OACSIM Construction Division if any project is scheduled for award prior to 31 Aug 05. *This guidance does not apply to BRAC installations that are considered gaining installations.*

Army Family Housing Construction and Operations (AFHC/AFHO):

For installations recommended for closure and realignment, OACSIM has identified projects as either under construction or under design/pending award. Once approved, a list of those projects will be provided.

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Upon review, installations must provide the Construction Division of OACSIM justification that supports each project no later than 31 Aug 05. OACSIM will review installation justifications and submit recommendations to the DASA (IH). USACE must update the percent of complete construction and BOD data and immediately contact the OACSIM Construction Division if any project is scheduled for award prior to 31 Aug 05.

Installations will identify any un-awarded FY05 major Maintenance and Repair (M&R) projects exceeding \$20,000 per unit or over \$1,000,000 per project, to include the anticipated award date and those projects planned for FY06 along with the project justification. *This guidance does not apply for BRAC installations that are considered gaining installations or those scheduled for privatization under the Residential Communities Initiative.*

Utilities Privatization (UP) – OMA:

UP evaluations at installations designated for closure will be suspended, except for the pending privatization of the Fort Monroe water and waste water systems. UP initiatives not yet awarded at installations proposed for realignment should proceed as scheduled.

Energy Savings Performance Contract (ESPC) – OMA:

New ESPC projects at installations designated for closure should be suspended. Installations designated for realignment should continue to develop new projects and execute existing ones.

BRAC provides the Army the best opportunity to meet the strategic and operational requirements of the 21st Century.

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David Williams is a general engineer in the Facilities Policy Division, OACSIM. **PWD**

BRAC to revamp medical system

by Jim Garamone

Defense officials have used the base realignment and closure process to transform the way military medicine operates. Medical facilities will

become more joint, they will consolidate where patients reside and they will become state-of-the-art. The recommendations mean changes to military medicine in the nation's capital and San Antonio, as well as changes in many other military health facilities in the United States.

The major recommendation would establish the Walter Reed National Military Medical Center on the grounds of the Bethesda Naval Hospital in Maryland. It also will create a new 165-bed community hospital at Fort Belvoir, Va. Army, Navy and Air Force medical personnel will staff both facilities. Part of this recommendation would close the Army's Walter Reed campus in Washington, D.C., and Malcolm Grow Hospital at Andrews Air Force Base, Md., would close its in-patient facilities and become a same-day surgery center.

In San Antonio, plans call for medical care to center at Brooke Army Medical Center at Fort Sam Houston. It will become the San Antonio Regional Medical Center, and will be a jointly staffed, 425-bed center. At Lackland Air Force Base, BRAC recommends building a world-class outpatient and ambulatory surgery center. The trauma center at Lackland will close, and Brooke will expand to handle the need. San Antonio also will become the hub for training enlisted medical technicians of all services.

The recommendations create six new centers of excellence for biomedical research, and all are joint. Assets will come from Navy, Air Force and Army locations to these new centers.

Overall, the recommendations will cost \$2.4 billion to build new facilities and capabilities. Once in place, the services will save \$400 million per year, officials said.

Jim Garamone writes for the American Forces Press Service. **PWD**



Assessing environmental impacts for BRAC 2005 Army recommendations

by Karl Markeset and Col. Thomas Crabtree

On May 13 the Secretary of Defense published the 2005 Base Realignment and Closure (BRAC) recommendations. This event marked the culmination of over two years of effort by the Army Basing Study Group (TABS), a team created under the Deputy Assistant Secretary of Army (Installations and Environment) specifically for BRAC analysis. The TABS effort for 2005 included rigorous environmental analysis to inform decision-makers of substantive environmental issues up front and ensure final recommendations were environmentally supportable. Since many installations will be affected by BRAC in some way, an understanding of environmental factors considered in TABS analysis may help installations prepare for implementation.

The Army's prior BRAC rounds have cost \$5.6 billion but have produced \$9.8 billion in savings. The Army continues to enjoy annual recurring savings of \$945 million, not including restoration expenditures. In the environmental arena, the most significant BRAC costs are accrued under the Restoration Program for installations recommended for closure. This is because an installation closure often involves a requirement to clean up some areas (such as operational firing ranges) to a higher standard

than current use when the base was operational. Despite the high costs of clean-up, BRAC still saves the Army significant resources over time. The entire Army restoration program has averaged \$560 million per year over the past 10 years, with \$175 million of this attributed to BRAC cleanup (compared to the above \$945 million annual BRAC savings).

BRAC Environmental Criteria

For BRAC 2005, language was added in the Defense Base Closure and Realignment Act of 1990, as amended through FY04 Authorization Act (Statute), adding specificity to Criterion 8 (environment). The environmental impact, including the impact of costs related to potential environmental restoration, waste management, and environmental compliance activities.

Figure 1 shows the DoD 8 Selection Criteria required by law to be considered under BRAC. The Office of the Secretary of Defense (OSD) convened a Joint Process Action Team (JPAT) to define how Criterion 8 would be applied by the three Military Departments and seven Joint Cross Service Groups (JCSGs) in BRAC analysis and recommendations. JPAT 8 was led by the Navy and included members from each Military Department (MILDEP), OSD, and the DOD Inspector General. As JPAT

8 members, TABS environmental analysts helped develop the processes, policies and products used in all phases of BRAC environmental analysis.

Capturing Environmental Impacts

The BRAC analysis process had five phases: 1) data collection, 2) capacity and military value analysis, 3) scenario development, 4) scenario analysis, and 5) option analysis/refinement/report writing. These phases were overlapping in practice, and each MILDEP and JCSG was somewhat autonomous in how they conducted the steps. Since each phase had specific supporting environmental requirements, the JPAT 8 developed policy guidelines and product templates to standardize environmental process across OSD. Figure 2 shows the environmental products supporting each phase.

Even prior to the formal establishment of the JPAT, MILDEP environmental experts worked together from September through December of 2003 to develop data call questions with a deliberate focus on how the data gathered by these questions could be used by the decision makers and to meet the legal requirements under Criterion 8. The goal was also to create a common set of environmental questions that were not duplicative or inconsistent. There were 101 joint MILDEP environmental questions asked of installations in the first BRAC Data Call. In a subsequent data call, the Army asked an additional 12 questions related to utilities and water resources.

Next, the JPAT organized the data ➤

Figure 1

BRAC Selection Criteria

1. The current and future mission capabilities and the impact on operational readiness of the Department of Defense's total force, including impact on joint warfighting, training, and readiness.
2. The availability and condition of land, facilities and associated airspace (including training areas suitable for maneuver by ground, naval, or air forces throughout a diversity of climate and terrain areas and staging areas for the use of the Armed Forces in homeland defense missions) at both existing and potential receiving locations.
3. The ability to accommodate contingency, mobilization, and future total force requirements at both existing and potential receiving locations to support operations and training.
4. The cost of operations and the manpower implications.
5. The extent and timing of potential costs and savings, including the number of years, beginning with the date of completion of the closure or realignment, for the savings to exceed the costs.
6. The economic impact on existing communities in the vicinity of military installations.
7. The ability of both the existing and potential receiving communities' infrastructure to support forces, missions, and personnel.
8. The environmental impact, including the impact of costs related to potential environmental restoration, waste management, and environmental compliance activities.

Figure 2

Phases	JPAT 8 Environmental Products
1) Data Collection	Environmental Data Call
2) Capacity & Military Value analysis	(not addressed by JPAT8)
3) Scenario Development	Installation Environmental Profiles
4) Scenario Analysis	Scenario Impact Summaries
5) Option Analysis	Cumulative Impacts by Installation



(continued from previous page)

into 10 environmental resource areas (shown in Figure 3), and this structured the rest of the environmental analysis process.

Figure 3

Environmental Resource Areas
• Air Quality
• Cultural/Archeological/Tribal Resources
• Dredging
• Land Use Constraints/Sensitive Resource Areas
• Marine Mammals/Marine Resources/Marine Sanctuaries
• Noise
• Threatened and Endangered Species/Critical Habitat
• Waste Disposal
• Water Resources
• Wetlands

The Installation Environmental Profile was designed as a narrative summary of the environmental data by installation. This product was intended to help BRAC analysts identify installations with environmental constraints, when considering gaining bases for potential actions. The Army environmental team automatically generated the Profiles using a Microsoft Access database query, and this ensured each installation's data was displayed identically without consistency errors.

Once initial scenarios were developed, the TABS environmental analysts assessed each proposal across the ten resource areas to identify environmental impacts and costs. This assessment was called a Scenario Summary of Environmental Impacts, and it was produced by a rules-based approach using eleven checklists (ten for the ten resource areas, and one for closures).

All assessments were based on certified data; primarily the answers to data call questions, but additional "open source" data was consulted such as Installation Status Report (ISR) - Environmental, or DERA restoration data when appropriate. The assessment provided qualitative impacts of costs for potential environmental restoration, waste management and environmental compliance efforts, and the assessments identified which environmental costs would be entered into the BRAC

costs and savings model.

During the Scenario Analysis phase, TABS assessed over 500 individual scenarios, many representing multiple variations on a similar theme. The OSD Final BRAC Report included 56 Army and another 57 Joint Cross Service Group recommendations that affected Army installations.

Once scenarios were refined and many others eliminated by Army decision-makers, the TABS environmental analysts assessed the cumulative impact of recommendations on an Army receiving installation. This combined assessment was called the Summary of Cumulative Scenarios' Environmental Impacts, and served as a final check to confirm whether total environmental impacts on each affected Army installation were supportable.

Unique Aspects of the BRAC 2005 Environmental Process

TABS benefited from significant advances over the past decade in collecting and providing public access to environmental and related data. These data resources included the Army Environmental Database - Restoration (AEDB-R) hosted by Army Environmental Center (AEC), the Installation Status Report - Environment (ISR2), hosted by the Assistant Chief of Staff for Installation Management (ACSIM), the EPA website for Air Quality data, the Army's Range Inventory Database, hosted by AEC, and Army Corps of Engineers - Construction Engineering Research Laboratory (USACE/CERL) Sustainable Installations Regional Resource Assessment (SIRRA).

In addition, TABS' complete data collection effort for BRAC was available via a contractor-designed Microsoft Sequel-Server database, with each installation's answer to over 4000 questions. Efficient access to data helped the TABS environmental team to execute the above-described process with a small staff of one military officer and three support contractor personnel. TABS team was augmented by reach-back expert assistance from a variety of Army environmental subject matter experts from AEC, Army Environmental Policy Institute (AEPI), US Army Center for Health Promotion and Preventive Medicine, and CERL.

The BRAC 2005 effort included collection and deployment of the Installation

Visualization Tool (IVT) Geographic Information Systems (GIS) data across the IMA regions. OSD funded the IVT effort in support of BRAC, and so digital imagery was collected on every major installation on the Army BRAC study list. The IVT imagery supported installation assessment and scenario development by providing the Army with a means for visualizing installation boundaries and environmental attributes. This effort should pay dividends in the future, as the intent is for this resource to remain in place and be enhanced with additional environmental data layers over time.

Another interesting aspect of Army's BRAC environmental analysis involved the development of a number of tools and models to assist BRAC analysts in synthesizing environmental data. With assistance from AEPI and CERL, TABS made use of models that synthesized collected data for basic air analysis, performed encroachment analysis, quickly identified environmental constraints across the 10 resource areas, and assessed each installation's capacity for accepting additional personnel and missions. These tools further enhanced efficiency and depth of analysis for the TABS study team.

As of this date, the Army's recommendations are still under review by the President's Commission on BRAC. The commission may recommend changes to the Report (additions and/or deletions), and then by Sept. 8, must forward to the President for approval or disapproval in entirety. Regardless of any changes, the President is likely to approve the Commission's report, and environmental factors will then play an increasingly important role as the BRAC process transitions to implementation in the following months.

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The Big Picture — Master Planning for AMF, IGPBS, and BRAC

by Don LaRocque

Assuming that the BRAC (Base Realignment and Closure) recommendations will be signed into law as proposed, the combination of what we're doing for the Army Modular Force (AMF) and Integrated Global Positioning and Basing Strategy (IGPBS) will result in moving about 150,000 people around the world. Most of them will come onto installations here in the United States, presenting a huge Master Planning challenge for us.

During the last year and a half, as shown in map 1, we have worked hard at temporarily stationing the 25,000 or so "new" Soldiers in the brigade combat teams (BCTs). We are close to completing the interim facilities at all of these locations as discussed in previous issues of the *Public Works Digest*. In addition, because of the BRAC announcement to take a BCT originally slated for Fort Benning to Fort Knox, we are currently working on a scope and cost package to get some temporary facilities for Fort Knox as well. This is quite an achievement!

In terms of the Military Construction,

the MCA that's going to be required to put these people into permanent facilities is estimated at over \$4 billion worth of projects, and that estimate was done to a fairly high degree of resolution. We've developed 1391s and completed planning charrettes for the projects, so the facilities are already sited and very well scoped. There will be some additional facilities in the Pacific, Alaska and Hawaii and we will have those costs shortly. This funding focuses on operational facilities, which cover barracks, motor pools, company headquarters, battalion headquarters, brigade headquarters, and dining facilities. This does not include the gymnasiums, child development centers, child and youth service centers, chapels and other types of community facilities that are also required to serve all these Soldiers. Our costs don't include them yet, but we're working the planning for them as well.

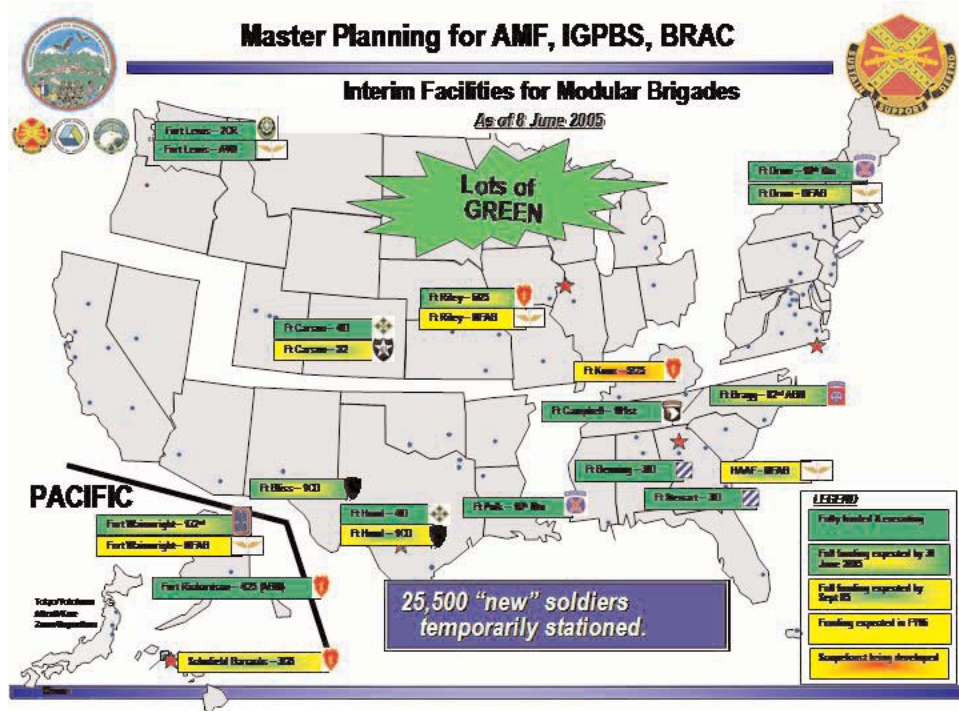
We are well down the road on master planning for the permanent facilities. ACSIM has invested a good amount of planning money into getting these facility requirements pinned down and scoped and

developing 1391s for them.

The next wave, for the years 2006-2011, is a group we refer to as the EAB, the Echelons Above Brigades. On top of the BCTs and the Aviation Brigades, there are Fire Brigades, Sustained Brigades, Maneuver Enhancement Brigades, Truck Companies, Military Police Units, Engineer Companies, etc.—all these units that really round out the force and complete the conversion of the entire Army to a modular force fall into this category. They are all those elements of the Operational Army that complete the enabling of the Modular Force. The EAB amounts to another 26,000 or so Soldiers that we have to figure out how to accommodate in the next couple of years. And we have to do that faster than we can get MILCON for them. Taking care of these folks is our next big challenge since they are in a lot of small units and the problem is really multiplying.

It is important to distinguish here between the Operational Army and the Institutional Army. Based on the TABS (Total Army Basing Study) reports and the BRAC announcement, we have filtered out that there will be almost 60,000 "new" people on our installations who are part of the Institutional Army. For our planning purposes, the Institutional Army includes offices (all of us white-collar folks), light industrial activities (laboratories, etc.), and schoolhouses like the Armor School, DEA School, and Culinary School.

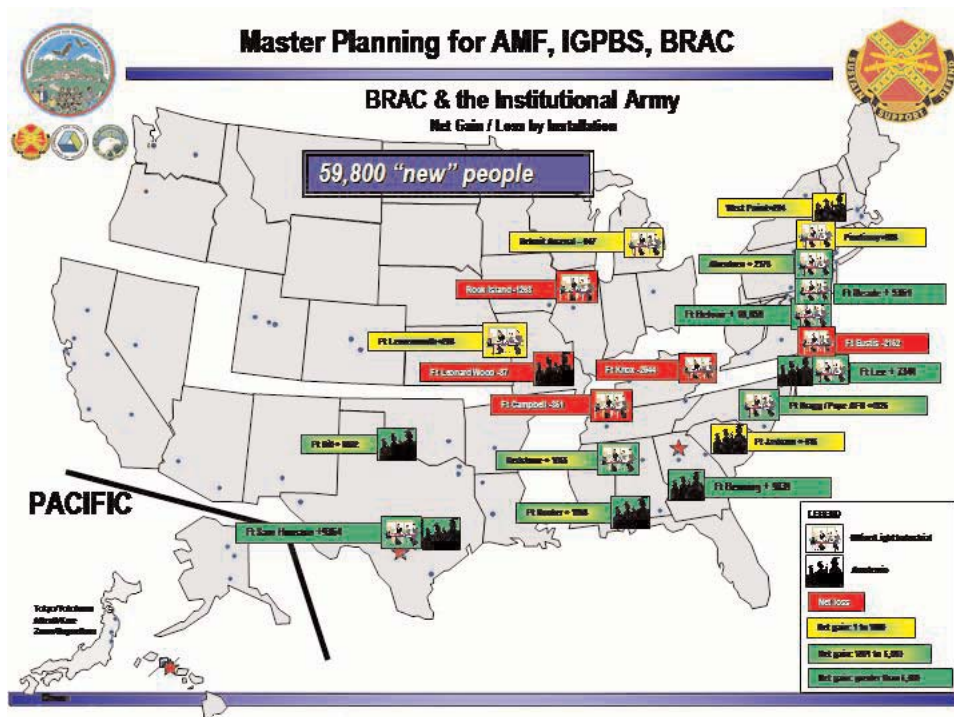
The two types of facilities that we have to plan for are *office buildings and academic facilities*. Our approach to the master planning for these is to get a centralized contract for developing the facilities requirements. At Fort Belvoir, for example, where about 12,000 office workers could be moving if BRAC is approved, we won't have to build a new building for each of the units moving there. We can gather all the information about the size of the activity, how many people they have, and what special operational needs they have, put it all together and come up with one or two office buildings similar to what we have in Crystal City, where more than one ten-



Map 1



(continued from previous page)



Map 2

ant can be accommodated in one building.

In a centrally-focused effort, we plan to hire a consultant who specializes in office buildings so that we can figure out what these people need. We are trying to get the Army to fund this. It makes us the honest brokers at this level so that the master planner at the garrison doesn't have to be burdened with some DoD agency over this issue. Map 2 shows the master planning impact of the BRAC recommendations in terms of the Institutional Army. We are just getting out of the starting block with this.

Adding the Operational Army to the Institutional Army, Map 3 shows the net change on our garrisons/installations where we are moving around more than 142,000 people. This equates to a lot of new facilities and accounts for about 95 percent of the BRAC impact on Army installations.

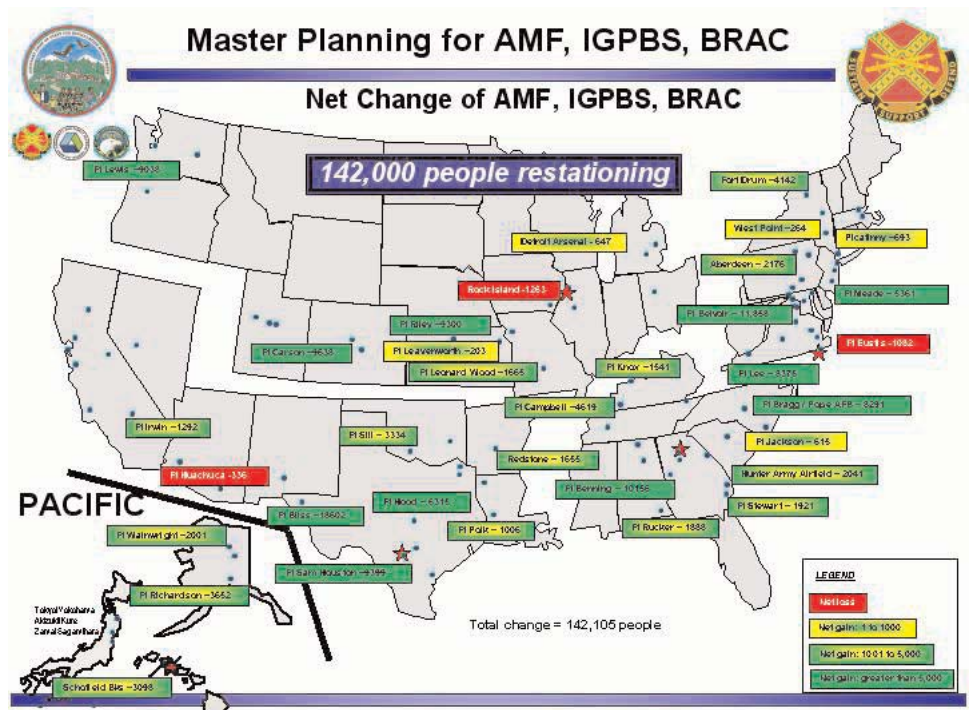
The BRAC had a number of recommendations on industrial alignments to a lot of industrial functions. The Air Force and the Navy will be going to Picatinny Arsenal for a certain type of function, but we have not yet assessed if that means adding more people or just bringing up their existing plant capacity.

In terms of progress, we are way down

the road on the Army operational side and are very comfortable that we are tracking quite well with the planning for construction. We're getting started on the 26,000

new soldiers and we're waiting for legislation on the 60,000. If the planning for all this is successful and we get a planning cell that focuses on office buildings and another that focuses on schools, things will be a lot easier. Instead of having each master planner trying to figure out how to plan an office building, we will be centrally contracting experts to work on nothing but office buildings and assist the master planners. The same thing goes for the schools. We would like to bring in outside contractors to plan schools.

However, the planning challenge is more than just planning for immediate requirements; it is assuring that these projects are sited within the compatible/appropriate land use on the installations and understanding the comprehensive long-term planning impacts to these realigned missions. This significant level of installation realignment provides the Army a unique once-in-a-lifetime opportunity to lay out a military community framed around a sound comprehensive development that is sustainable and effectively meets the Army's needs for the next 50 to 60 years. The Army is facing a massive installation planning challenge, but our cadre of Master Planners, Military Construction Programmers and Construction Agents combined with



Map 3



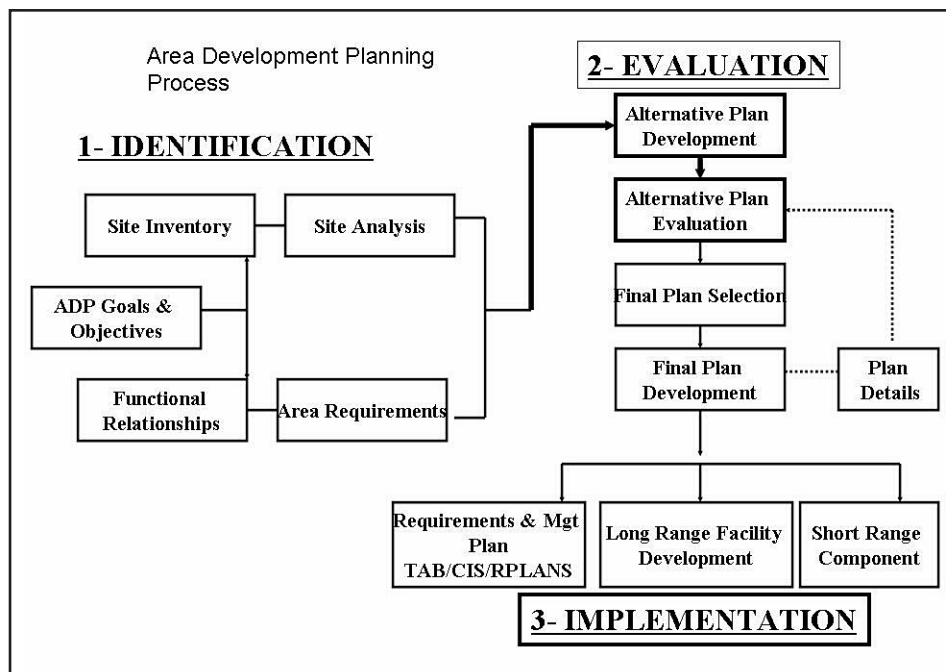
Master Planning in times of rapid change

by Jerry Zekert

Army Installations are facing the some of the most significant changes in a century. With Base Realignment and Closure recommendations, the fielding of the Modular Force and the return of units from OCONUS, installations missions are radically being changed. Over 147,000 people may be re-stationed as a result of these actions. With these complex realignments many of our installations have unique opportunities to re-look their existing master plan vision for development and create a redeveloped community that meets the Army's needs in the 21st Century.

Without careful master planning of our installations, major site development mistakes can be made that can result in compromising the long-term capability of the installation to support the Army mission requirements. Without consideration of smart land use planning, construction can be built that will box out installations ability for future development. While the re-stationing drives the urgency of the projects, un-wise siting of these both interim and permanent facilities may limit the Army's ability to support future requirements

Army installation master planning's prime focus is to guide the long-range comprehensive development of installations. Long range means assuring that the installation's long-range capacity to support mission requirements is maintained. This planning perspective is essential to guiding a logical process of development that responds to the changing Army over time. Using the master planning process assures that installations are developed in a comprehensive and holistic manner, and long-term development opportunities are



maintained.

The scale of installation master planning involves several levels. At the highest level, the Real Property Master Plan (RPMP) addresses the Regional planning impacts of the installation to the surrounding region. The next level is the installation-wide planning level, where installation-wide planning strategies are addressed. The installation development strategy is framed around appropriate compatible land uses.

The next echelon is area development planning where a specific area within the installation is unified by either function or architectural area. The lowest echelon is site planning where facilities are sited. The beauty of the installation RPMP is that as a result of being prepared in a comprehensive, collaborative process, it addresses the

multi-levels of planning concerns simultaneously.

To meet the immediate planning challenges, the Army must look at the master planning related needs for these re-stationing actions as not a set of individual project siting activities but rather a set of distinct functional area development complexes that holistically frame a concept of orderly development. This article explains how installations can use sound practices of area development planning to develop the required level master planning needed to meet both the long range and immediate needs for our installations and illustrate how short term immediate project development can be interconnected.

Area development planning is planning an area in more detail than normally is done during comprehensive installation-level planning. It often results in refinements of siting decisions and a clearer understanding of the way in which facilities relate to each other and their surrounding environment.

The area development process is a three-phase process that results in the implementation of a plan. These phases include:

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sound planning policies framed around AR 210-20, Master Planning for Army Installations, and our visionary installation master plans will assure success for the Army today and the future.

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Don LaRocque is the chief of the Public Works Division at HQ IMA **PWD**



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Phase One: Identification of the Requirement

This phase involves a comprehensive set of steps that identifies the planning requirement. It includes defining the Goals and objectives of the Plan inventorying and analyzing existing site conditions, identifying functional relationships and defining Area requirements.

Defining goals and objectives defines the direction of the development plan. It includes the overarching goal for the plan and the individual sets of objectives that must be considered in the goal. Further, in conjunction with the goals and objectives, the planner should identify areas to consider and refer to the installation's existing land use patterns and select areas where compatible land use relationships exist. If this is not possible, the objective in the plan will be to resolve the non-compatible patterns. In defining the program requirements driving the stationing action, planners need to understand the demographics and unit makeup of the units. They need to use existing planning criteria from not only RPLANS but also FPS and Army modularity planning guidance to build the inventory of requirements. Planners must understand in this step that this is just the initial definition of the programming requirements.

The process to inventory and analyze existing site conditions is essential to gain a full understanding of the affected area(s). A significant part of this effort is data collection, which should be focused around physical constraints, users needs, and existing functional relationships. The Installation RPMP can serve as a good sound repository for this data collection and synthesis process.

The primary areas that planners must consider include environmental constraints, (wetlands, steep slopes, or engineering problems); physical constraints (lack of available parking); opportunities (historical buildings providing strong precedent for architectural character or image); as well as existing facilities suffering from poor siting, which may in turn have an adverse affect on the functioning of the area.

Base maps will be needed for the area,

usually at a scale of 1" = 100' or 1" = 200', but this may vary depending on the size of the given area. Elements on the base map usually found include existing structures, existing transportation features (roads, walkways, etc.), important natural features (lakes, streams) and other important site features such as runways, fence lines, utility easements, training ranges, etc.

Development of a composite Constraints and Opportunities Map is the final step in the site analysis process. To produce this map is a series of iterative steps, then the planner needs to map the important built features of the area. The first step is to map the factors relating to the natural environment. These include buildings, which should be preserved, or enhanced as important creators of image, share functional connections with future development or have a negative impact on the area through poor siting, deteriorated conditions or some other factors.

Finally, the planner needs to map planning constraints imposed for various safety, health or security reasons. This includes airfield/air space constraints, explosive safety quantity distance arcs, visually intrusive items which should be screened, important visual nodes such as points of entry or major crossroads, and major landmarks such as historic facades, monuments, or memorials.

When developing the final, the map applies values to the noted relevant factors, interpreting the constraints to be avoided or mitigated or as opportunities to be exploited. In this way, observations can be translated into action. The Constraints and Opportunities Map will give additional direction for the development of the ADP alternatives.

Identifying functional relationships addresses understanding relationships of actual buildings rather than land use. Knowledge of existing and planned facilities within this area and the ways in which functions housed in these facilities interact is needed. These findings can be summarized in a matrix or more graphically in bubble diagrams, which communicate information regarding scale and spatial relationships.

Determining Land requirements and land availability is the final focus of deter-

mining the requirement. Land requirements are determined by building footprints, parking, setbacks, open space, access and any other special land requirements a facility might have, such as outdoor storage.

Other factors to consider are utility requirements and noise and visual buffers. Approximate land area coverage for buildings can be determined using the general square footage requirements provided in the master plan and choice of building height. Also, planners should understand that these building footprints are basic concepts that will be refined during the alternative phase.

Determining developable land areas is also essential for the ADP to be completed. Any given area will contain multiple potential development sites. Available land should be determined from the composite Constraints and Opportunities Map. Space, which may be available through demolition or rehabilitation, should be identified.

Identifying Functional Relationships:

The importance of accessing functional relationships at the land use level is well defined. The process, consisting of analyzing the interactions between categories of land uses need to be linked or separated in order to function properly. Similar analysis can occur at the area development level of planning. This analysis involves reviewing relationships of actual buildings or facilities rather than land use. Knowledge of existing and planned facilities within this area and the ways in which functions housed in these facilities interact are required. Interviews with current/projected users may be required to achieve the necessary understanding of the functional area. These findings can be summarized in a matrix or more graphically in bubble diagrams, which communicate information regarding scale and spatial relationships.

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Phase Two: Evaluation of Alternatives/Selection of Preferred Option

The process of alternative development and the selection of the preferred option is an iterative collaborative process resulting in a solution that best meets the goals and objectives of the planning effort. This phase involves three distinct activities. They are defining alternatives; evaluating alternatives and selecting a preferred plan.

Alternative Development. If the overall purpose of area development planning is to define the existing and the proposed facilities, which will, ultimately, compose a given functional area, and, working within the area limits, arrive at that arrangement of facilities which gives the most satisfactory results from a functional and aesthetic point of view, then it is important to explore several alternative plans before arriving at a preferred plan to ensure that all implications of the siting decision have been explored and understood. The result of this process will be a series of plan alternatives with each programmed project having one or more alternative sitings and layouts.

Alternative Evaluation: When drawing up different plan alternatives, a list of pros and cons should be made up simultaneously for each alternative. These evaluations will be used to compare alternatives to select the preferred plan for further refinement. Criteria can be defined as easily as the set of objectives in phase one. The alternative evaluation process is a balancing act weighing conflicting demands such as site constraints, ideal solutions, costs and future

expansion needs. The preferred alternative will be the one that best addresses these demands while at the same time meets the goals and objectives outlined at the beginning of the process. This may take several iterations of alternative development.

Selecting the Preferred Plan: Selection and finalization of the preferred plan requires that all the stakeholders that have been involved in the evaluation of the assets and liabilities of alternatives and a consensus recommendation to the garrison commander and the Real Property Planning Board.

Final Plan Documentation: Once the preferred plan is approved, the final action of this phase is the final plan documentation. The plan traditionally portrays the following elements:

- Building envelopes drawn to reflect the required square footage and desired orientation; however, the building designer will determine actual footprints.
- Appropriate building setbacks.
- All roads and parking lot layouts: Parking lots must accurately show the number of cars to be accommodated.
- All required pedestrian circulation improvements. These should reflect existing conditions as well as planned improvements.
- Areas set aside for plazas or outdoor displays associated with a particular facility. The Installation Design Guide may provide guidelines for such amenities.
- Areas with special pavements and street furnishings—other important large scale open space elements such as athletic fields or parade grounds.

Phase Three: Implementation

Once the plan is approved, appropriate implementation actions are required. They include completion of Military Construction programming documentation, fielding of interim facility solutions, and completion of space reallocations. Also, the existing installation planning documentation must be updated to reflect the approved redevelopment this includes an implementation phasing plan that tracks activities over time. If the area development plan considers the holistic planning needs for development, it will provide the information needed to complete all DD1391 documentation and reduce the programming charrette effort.

While the Army requires many facilities immediately to support several of the Modular Force requirements, installation planners must address facility siting in the context of long-term Army mission requirements for the installation. Much of the considerations addressed in the area development planning process, can be integrated into the area development of the Modular Force needs. It is imperative that siting be addressed at the land use/area development scale. Installations need to use the existing RPMP's long-range components as a resource. Further, as installations create the "focused master plans," they need to follow the area development process and avoid areas where there are incompatible land uses or other development constraints.

The area development planning process aims to create the most functionally efficient and aesthetically pleasing arrangement of facilities possible within a given area. The most important results of this process include:

- A thorough analysis for the physical features of the area, as well as programming requirements.
- An involvement of the ultimate users of the facilities, through interviews early in the process.
- An exploration of multiple alternatives before settling on a final plan, to ensure decisions are looked at from many points of view.
- The development of a final plan, which illustrates all siting decisions and shows the final form of the Area after all project construction is complete.
- An implementation and phasing strategy to complement the final plan and ensures a problem-free construction process.

With all the significant realignments and Modular Force restationing, the area development planning process provides Army installations a comprehensive process to quickly build a vision for orderly installation development.

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Jerry Zekert is on the DoD team at HQ USACE

PWD



The Army Dams and Bridges Program--public law driven

by Mike Dean

The inventory, inspection, maintenance, and repair of dams and bridges are governed by public law and as such carry the possibility of severe penalties for those who do not abide by them. The Garrison Commander is considered the owner of the dams and bridges under his/her control and legally liable and subject to possible personal litigation if it is considered that he/she broke the law by not managing the dams or bridges as required.

The Army Dam Safety Program

The Army Dam Safety Program is governed by Public Law 92-367, as amended by Public Law 104-303, National Dam Safety Program Act, and guidance and policy is set forth in AR 420-72, Transportation Infrastructure and Dams. The Army has to report to the Federal Emergency Management Agency (FEMA) every two years on the Army Inventory of Dams, condition of dams, dam training, and repair and maintenance performed. The general policy is to manage Army installation dams by periodically assessing the condition of all dams, establishing work plans, and developing maintenance strategies to make best use of available maintenance funds.

The life and health safety of downstream populations is a key consideration in the maintenance of dams. Having no funds does not relieve the Garrison Commander of responsibility. The Garrison Commander must give these areas the highest priority and request funds from the supporting headquarters. The POC for Army policy is Michael Dean, mike.dean@us.army.mil; the POC for HQIMA coordination is Yun Heo, yun.heo@us.army.mil; and the POC for the IMA Bridge and Dam program is Joe Fuller, joe.s.fuller@us.army.mil.

The Army Dam Safety program has four parts:

1. Inventory. Public Law requires all dams to be placed in the National Inventory of Dams (NID) with required technical data on the dams. The inventory is to be updated every two years. The Army Inventory of Dams, which is a portion of the National Inventory of Dams, is maintained for the Army at the Engineering Research and Development Center (ERDC), U. S. Army

Corps of Engineers (USACE). The POC for questions and coordination on this inventory is Tina L. Holmes, Tina.L.Holmes@erdc.usace.army.mil or Mr. Joe Fuller, joe.s.fuller@us.army.mil.

2. Inspection. Public Law requires all dams to be inspected periodically. How often a dam is inspected is influenced by Hazard Category of the dam, condition of the dam, and events that may have damaged the dam. Dams are categorized by being a High Hazard dam, a Significant Hazard Dam, or a Low Hazard dam. All dams require an annual inspection, more frequent inspections if in poor condition, or right after a catastrophic event. High Hazard and Significant Hazard dams also require a more formal detailed inspection every 5 years. Local USACE Districts can assist in these inspections.

3. Emergency Action Plans. All dams are required to have an Emergency Action Plan. For Low Hazard dams this may be SOP or Standing Operation Procedure. High Hazard and Significant Hazard dams are required to have a formal Emergency Action Plan as detailed in FEMA 64, Emergency Action Planning Guidelines for Dams. The Emergency Action Plans for High Hazard dams and Significant Hazard dams is to be reviewed annually and exercised periodically. Local USACE Districts can assist in formulating these plans.

4. Maintenance and Repair. Army dams are to be maintained as shown in appropriate FEMA documents. Deficiencies found on High Hazard and Significant Hazard dams that jeopardize the stability of the dams are to be repaired or the water behind the dam is to be lowered. Dams that can not be repaired should be demolished or replaced. Dams are to be repaired to the host states criteria. Local USACE Districts can assist in project formulation and execution.

The Army Bridge Safety Program

The Army Bridge Safety Program is governed by Public Law 95-599, Surface Transportation Assistance Act of 1978, and guidance and policy is set forth in AR 420-72, Transportation Infrastructure and Dams. The Army has to report to the Federal Highway Administration (FHWA) annually

on the Army Bridge Inventory. The general policy is to manage Army installation bridges by periodically assessing condition of all bridges, establishing work plans, and developing maintenance strategies to make best use of available maintenance funds.

Having no funds does not relieve the Garrison Commander of responsibility. The Garrison Commander must give these areas the highest priority and request funds from the supporting headquarters.

The Army currently has been receiving funds from the FHWA for inspection, training and inventory. In FY04, the Army received \$1M in funding for the inspection and inventory of bridges. In FY05, the Army has already received \$500K in funding for the inspection and inventory of bridges and is expecting to receive another \$500K before the end of the fiscal year.

The POC for questions and coordination on this funding is Terry Stanton, Terry.R.Stanton@erdc.usace.army.mil. The POC for Army policy is Michael Dean, mike.dean@us.army.mil; the POC for HQIMA coordination is Yun Heo, yun.heo@us.army.mil, and the POC for the IMA Bridge and Dam program is Joe Fuller, joe.s.fuller@us.army.mil.

The Army Bridge Safety program has three parts:

1. Inventory. Public Law requires all public bridges to be placed in the National Bridge Inventory (NBI) with required technical data on the bridges. The Army policy is that all Army bridges are considered public bridges. The inventory is to be updated annually. The Army Bridge Inventory, which is a portion of the National Bridge Inventory, is maintained for the Army at the Engineering Research and Development Center (ERDC), U. S. Army Corps of Engineers (USACE). The POC for questions and coordination on this inventory is Mr. Terry Stanton, Terry.R.Stanton@erdc.usace.army.mil or Mr. Joe Fuller, joe.s.fuller@us.army.mil.

2. Inspection. Public Law requires all dams to be inspected every two years. Bridges have to be inspected in accordance with the National Bridge Inspection Standards (NBIS). The POC for questions and coordination on inspections is



Deconstructed and recycled or smashed and buried?

by William F. Eng

It wasn't too long ago that almost all excess and unserviceable buildings in the Army inventory were either bulldozed over or pulled down by a bucket loader and pushed into piles of rubble. The rubble pile was a hodge-podge of broken timbers, tongue and grooved flooring, pieces of dry wall, and wood /asbestos-cement siding. Mixed in was a tangle of electrical wires, cast iron drain pipe, and copper or steel water piping. This mess was loaded onto a dump truck and hauled to the garrison construction & demolition (C&D) dump or cross town to the open dump.

To some, demolition is a "no-brainer." It's quick, cheap, and hassle-free, Right? Well, it depends. Many installations have standard demolition contract specifications on the shelf and pull them out when there are enough excess buildings to be demolished. A quick cost estimate is created, figuring around \$2 to \$4 per square foot of building to be removed, funds secured, and the contract awarded. The rest was done on auto-pilot – and valuable resources were allowed to be busted up and buried.

Demolition isn't a dirty word. It's just not the best way to remove a building or structure in the most environmentally efficient way, when we take into account all the cost factors. We've come along way in the past few years and there are better uses for the materials that old buildings are made of than just being buried in a landfill. The true cost of demolishing buildings and burying C&D wastes has to include the cost of opening and closing the landfill site, as well as the 30 plus years of monitoring for off-site pollution and correcting erosion damage, and not just the daily costs of operating and maintaining the landfill. One way to make C&D waste generators

face the real cost of business is to begin charging everyone for using the Army-owned landfill or C&D landfill on the installation. Including the use of the Army's landfill in a construction or demolition contract without cost to the contractor provides little incentive to act in an environmentally responsible way and to recycle / recover C&D wastes, whenever possible.

Deconstruction, a recent addition to the construction industry lexicon, as compared to demolition, is the planned and controlled disassembly of a building that preserves the integrity of the building materials and components so that they can be reused or recycled. Imagine how a wooden World War II (WWII) era barracks building with dimensional wood framing, truss roofing structure, tongue and grooved siding and flooring was constructed and just run the video in reverse and that's what deconstruction is all about. An article in the November/December 2004 Public Works Digest (Army deconstruction gains momentum) by Tom Napier and Dana Finney presented a concise overview of what the Army has been doing in pioneering the deconstruction of WWII wood buildings. They tell some very interesting



success stories about the innovations Forts Knox, Gordon, and Campbell are trying to stimulate public interest in helping the Army to reduce our facilities infrastructure by bidding on the rights to a particular building and investing sweat equity by carefully and methodically taking the building apart, board-by-board.

Tools designed especially for the deconstruction trade are now becoming common place, such as a tool for de-nailing lumber. By leveraging equipment and hand tool technology, deconstruction experts are leveling the playing field and becoming very cost-competitive with traditional demolition techniques.

C&D wastes come from many different kinds of activities on an installation. The biggest waste producers are the Military and Family Housing Construction Programs, during the "demolition" phase where the original buildings are removed to make way for the new ones and in the new construction phase.

Major renovation and rehabilitation projects, funded by O&M dollars are also significant sources of C&D wastes. Although, not strictly under the control of the installation solid waste and recycling managers, the Residential Community Initiatives (RCI) programs could potentially produce vast quantities of building

(continued from previous page)

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3. Maintenance and Repair. Methods of maintaining, repairing, and improving bridges, major culverts, and retaining walls are described in TM 5-600. Deficiencies found on bridges are to be repaired in

accordance with AR 420-10, AR 415-15, and IMA policies or the bridge will be closed. Local USACE Districts can assist in project formulation and execution.

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Mike Dean is a general engineer in the Facilities Policy Division, OACSIM. **PWD**



Bulletin on reuse of concrete

by Stephen Cosper

Now available for download on the web is Public Works Technical Bulletin (PWTB) 200-1-27, "Reuse of Concrete Materials from Building Demolition." This bulletin contains guidance to help DPWs find ways to reuse concrete demolition debris for beneficial purposes.

Construction and demolition waste is a major contributor to an installation's solid waste stream—as much as 80%. Of this material, concrete is a large fraction. While landfilling concrete would not seem to be environmentally damaging, it does take up valuable landfill space which should be used for more problematic materials. The reuse and recycling of waste concrete can be cost effective if these recycled aggregate products can replace other, virgin products purchased for construction, road-building, etc. Recycled concrete aggregate (RCA) is suitable for many (not all) applications that call

for unspecialized bulk materials, such as road base, bank stabilization, and pavement for trails.

The PWTB presents information on the physical properties of RCA; pros and cons of using RCA for typical installation requirements; specifications; processing equipment; and economics.

PWTB 200-1-27 can be downloaded from the TECHINFO website at: <http://www.hnd.usace.army.mil/techinfo/C PW/pwtb.htm>. For more information about this bulletin or solid waste issues in general, please contact Stephen Cosper at CERL, 217-398-5569,



Concrete crushing operation at the Fort Campbell construction waste landfill.

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materials that could be recovered for reuse or recycling rather than buried in a landfill. It doesn't matter if the landfill the RCI contractor planned to use, is on or off the installation, failure to divert the C&D wastes from disposal is not

Recovered and recycled materials from excess and obsolete Army buildings have ended up in diverse places. Some have gone to the Habitat for Humanity's RESTORE retail outlet for home-owners and Do-It-Yourselfers can buy building materials and components at a fraction of the retail cost to fix up their homes. Others have gone into very high-end buildings that could gloss the pages of Architecture Today.

An Army policy, which is soon to be released, links these programs that have the potential to produce significant amounts of C&D wastes with two benchmark initiatives that have stretch goals of continuously increasing our diversion of solid wastes from land disposal (the Office of the Secretary of Defense Environmen-

tal Measures of Merit for solid waste diversion) and striving for the highest levels of sustainability in our built environment (the Army's Sustainable Design and Development principles.)

To make installation reporting easier, OACSIM is looking at adapting the web-based Solid Waste Annual Report System (SWARWeb) for capturing the C&D waste management activities along with the routine solid waste and recycling operations at installations. This will help on the annual environmental reports as well as any state-level reporting that installations are required to do.

Resource Management – Wooden Buildings

TYPES OF MATERIALS

Framing lumber	21 tons
Board sheathing	12 tons
T&G finish floor	6 tons
Drywall	20 tons
Concrete	22 tons
Bricks *	9 tons
Siding (wood)	12 tons
Siding (added)	1 ton
Shingles	3 tons
Doors & windows	½ ton
Metals	2 tons
Misc. Components	varies

Typical WWII-era Barracks Building



Ft. Lewis

The future of deconstruction and recycling/recovery of C&D wastes by the Army is bright.

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William F. Eng works on utility issues in the Facilities Policy Division, ACSIM. **PWD**



Facilities engineering on Army installations

by Robert J. Dworkin

As I sit in my present position with the U.S. Army Corps of Engineers, I ponder whether I might have anything of interest to write about concerning the subject of facilities engineering on Army installations. You bet I do!

Turning the calendar back to 1980, I was looking to get back into government service after a brief stab at private industry. When I left the Corps in 1978, they said "He'll be back," and they were right. I responded to a help-wanted advertisement in the *Kansas City Star* soliciting a civil engineer for the Facilities Engineering Office at Fort Leavenworth, Kansas. The official name of the office, at that time, was the Directorate of Engineering and Housing (DEH). Luckily, due to my prior experience with the Corps and my educational credentials from the University of Kansas, I was hired.

Fort Leavenworth is a very interesting place. Tucked away to the north of the town of Leavenworth, bounded by the Missouri River and characterized by historical buildings and lush green trees is a beautiful installation whose main claim to fame is the Command and General Staff College. Military installations are their own little cities and Fort Leavenworth is no exception. They have administrative governing body facilities, hospitals, movie theaters, commissaries, restaurants, educational facilities, fire stations, parks, golf courses, housing, disciplinary barracks, and all the infrastructure of a small city including but not limited to, streets, parking lots and utility systems. With all the people, and all the demands that people have (trash pickup and snow removal to name a few), you can well imagine that a Public Works Department is a necessary and crucial part of a military installation.

As a civil engineer working for the DEH, I had my responsibilities cut out for me. My duties were not only to ensure that all the roads, sidewalks, parking lots, traffic signals, storm sewers and grounds were being maintained properly; but I was also tasked with ensuring that architectural improvements were being made to all the

buildings. This included new roofs, new windows, new doors, and improvements to building ventilation systems.

Some of my other jobs were to design and construct a new golf club house, a new golf course maintenance facility, dog kennels for our Hunt Club, and a new jogging path. Other items of work that I can remember included replacing floors, recycling pavements, painting and tuck pointing projects, building new pump houses for water supply, building and maintaining water and sewage treatment facilities, inspecting and re-lining sewer systems, and even designing and constructing renovations to a military police facility.

Because Fort Leavenworth is an historic installation with many buildings on the National Historic Register, one of the main challenges we had was in working with the State Historical Preservation Office (SHPO). With our constant remodeling and rehabilitation of all the buildings we needed to be very careful about what we did to the buildings. Therefore, all of our designs had to be reviewed by the SHPO. Luckily we had a SHPO advocate working for us and he made sure that we were not compromising the integrity of the historical features of the buildings whenever we replaced replaced or remodeled something.

Our staff received several awards from the SHPO for preserving historical features during many of our building renovations.

All of the people who worked at the Fort Leavenworth DEH were very proud of the jobs they performed and exercised care in taking care of the post including all the buildings and grounds. As I said before, we were our own little city. But as small as it was, that did not diminish the pride we took in our work. Included in our group were other engineers such as mechanical, electrical and even environmental engineers. I personally became so caught up in the work that I earned my Professional Engineering License while working there and joined many professional societies such as the American Public Works Association and the Society for American Military Engineers.

The experience I gained working at the Facilities Engineering office at Fort Leavenworth was immeasurable. First of all, I gained great experience in design by preparing plans and specifications. Second, I learned a great deal about civil and architectural building materials, the labor involved in construction, and the equipment associated with performing the construction. Third, I became much more knowledgeable concerning contracting procedures, construction practices and how to work with material suppliers in the design phase.

At Fort Leavenworth, as is probably the case with most installations, I could design the job, see it through the contracting, negotiating and/or bidding phase and even observe the actual project being executed in the field. I could get up from my desk, drive or walk out to a construction site and witness my own project actually being built.

Today, I am a Program Manager with the Corps of Engineers working on environmental remediation of Formerly Used Defense Sites. The work I perform is very interesting and challenging; however, it can be frustrating at times. In contrast to the work I performed at Fort Leavenworth, I do not always see completion of my projects. I am not usually as close to the work as I was working in the facilities engineering field. I did not realize it at the time, but today, I must admit that I look back on my days at Fort Leavenworth as some of the most satisfying work I have ever performed.

I wholeheartedly recommend to all engineers to consider taking a position at an Army or Air Force installation in the facilities engineering arena. Today, much of the work is contracted out to private firms; but whether in government service or working for a contractor, the facilities engineering and public works field is diverse, interesting, and rewarding.

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Robert J. Dworkin is a civil engineer with the Omaha District, U.S. Army Corps of Engineers.

PWD



Managing change with Installation Design Standards

by Vincent Kam

What is the right size, the right place, the right quality, the right safety and security, the right resources, and what are the right tools and metrics for Army installations? What guidance is available to help shape Army's future installations in the rapidly changing environment? These are questions facing garrison commanders as they face the challenges presented by force transformation and business transformation that will shape the future of Army installations.

Installations today are shaped by Army requirements on resetting, restructuring, rebalancing, and stabilizing the force. To enable the creation of new modular brigades, the Army has greatly accelerated the normal planning, programming and budgeting cycle. Garrison commanders must find innovative solutions to support additional Soldiers and their families, training, and new equipment. Planning for facilities and infrastructure must reflect changes in Army doctrine, new organizations, training, materiel innovations, and capture the realities of the security environment. The imperatives to managing an installation change—the Army Facilities Standardization Program and the Installation Design Standards provide the necessary help for command and staff.

Why Army Facilities Standardization Program and Army Installation Design Standards? The Army Facilities Standardization Program (AFSP) has been rejuvenated from a long dormant period to become the forum where Army mission specific requirements and facilities standards are imbedded in facility designs. This is a fundamental change in facility planning, design, construction, and operation process. For the ten years preceding the reestablishment of the current AFSP, installations generally were free to define facility standards inde-

pendent of Army requirements and long-term facility management. Therefore, redundancies of similar facilities occurred.

The new AFSP is the formal process for developing Army Standards, Standard Designs, and technology standards for facility complexes and facilities including components and systems. The objective of the AFSP is to ensure Army and functional proponent requirements are preeminent in development of standard facility designs. Standardization achieves savings and benefits in planning, programming, design, construction, operation, and maintenance of Army facilities.

A key document and management tool for the AFSP is the Installation Design Standards – a compilation of all approved Army Standards, Standard Designs, zone planning guidance, and technology standards, and maintained on the Assistant Chief of Staff for Installation Management (ACSIM) web site (<http://www.hqda.army.mil/acsim/homepage.shtml>).

an external physical environment in complete detail to form the built environment. Addressed are such design components as accessibility, environmental, natural conditions including topography, hydrology, and climate, and manmade conditions. Circulation design provides the Army Standards for both vehicular and pedestrian traffic. Vehicular circulation includes standards for a roadway hierarchy, setbacks for buildings, intersections, parking, and integration with the other elements of the environment including landscaping, service areas and drop-off area. Standards are also defined for walkways, running trails, and bikeways.

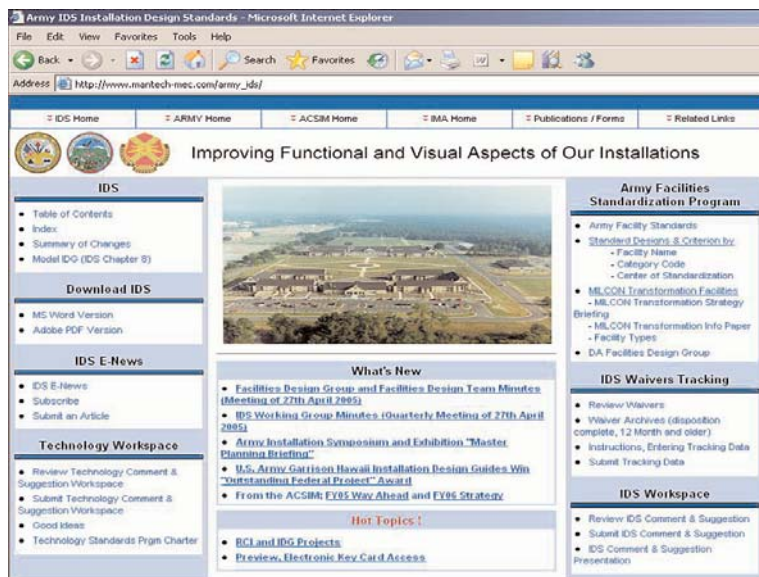
The IDS also provides guidance on creating area development plans, using vistas and focal points for design emphasis, and establishing relationships between adjoining functional areas.

Right quality: The IDS provides guidance on building, site elements, and landscaping design standards. Building standards include planning, design, construction,

operation, maintenance, sustainment, repair, and modernization. The standards for physical security, building design, structural character, accessibility, seismic, historic preservation, interior design, furnishings, sustainability, mechanical, electrical, and communication systems apply to all facilities. The standards for building entrances, plazas, courtyards, service areas, and lighting are established. Site element design standards include site furnishings, exterior signage, exterior lighting and utilities. Landscaping design standards include the selection,

placement, and maintenance of plant material to improve the physical and psychological well being of the people on the installation. There are standards for tree protection and preservation.

Right safety and security: The IDS provides guidance on safety, security



Right size and place: The IDS provides guidance on site planning and circulation design standards used in the installation real property master planning process and for project site designs. Site planning defines the process of arranging



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and antiterrorism standards. In addition to referencing the *Uniform Federal Accessibility Standards*, the *National Fire Protection Codes*, and the *DoD Minimum Antiterrorism Standards for Buildings*, the IDS addresses standards for fencing, force protection elements on landscaping, berms, access control points, and exterior lighting.

Right resources: The IDS defines the purpose, authority, and applicability of the standards. It provides the general basis to evaluate project approval requests. Where deviations from the Army Standard are necessary, the IDS provides the procedures for submitting a request for waiver of a standard and offers the administrative means to track and manage the waiver requests on the ACSIM web portal.

Right tools and metrics: The IDS provides a model for installation-specific Installation Design Guides (IDG). It includes instructions on the process, pur-

pose, sustainable design development, analysis criteria, installation profile, visual themes and zones, improvement projects, prioritization, and creating an implementation plan.

Managing change: Military construction transformation and Army Standards: The Assistant Chief of Staff for Installation Management (ACSIM) is charged with the mission of providing Soldiers with quality living and working conditions. Early this year the ACSIM, the Installation Management Agency, and the U.S. Army Corps of Engineers formed a partnership to develop a strategy and implementation plan to transform the military construction (MILCON) process in order to provide quality permanent facilities for Soldiers and their families.

MILCON Transformation will be implemented through demonstration projects in the FY06 construction program with a transition to the methodology dur-

ing the FY07 program. Throughout this period, the Army Standards ensure the performances of transformed facilities are equal to or better than current facilities. Facility types that will be used in the near future for the transition include barracks, company operations facilities, brigade headquarters, battalion headquarters, dining facilities, and tactical equipment maintenance facilities.

In these rapidly changing times, Army garrisons are faced with many challenges. The Army Facilities Standardization Program and Installation Design Standards will help command and staff meet the challenges of redesigning their installations.

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Vincent Kam is the Army proponent for the Installation Design Standards and Senior Program Manager/Civil Engineer in the Facilities Policy Division, OACSIM. **PWD**

Installation capabilities

by Philip R. Columbus and Kelly M. Dilks

The Army and our installations today face challenges unprecedented since the World War II mobilization. Similar to the situation today, the World War II mobilization involved massive changes to our Army's structure, doctrine, and training while in the middle of a major conflict.

The role of installations is changing as well. No longer merely deployment platforms and support for the well-being of Soldiers and their families, installations now provide continuous support from the fox-hole to home station throughout mobilization and deployment. As the Army transforms with an unprecedented level of force structure change and technology integration, installations will undergo a corresponding change in business processes, roles and responsibilities. The integrated, collective capabilities and capacities of installations in any given geographic region will far exceed what any one installation can provide. The Army is simultaneously

enhancing its joint support role to interagency and multinational cooperation.

The challenges our installations face as the Army transforms will require new ways to implement and manage change. Army installations cannot meet the changing force operating capabilities by adopting improvements in technology or business practices piecemeal. Rather, the Army must adopt a strategy in which changes and improvements are evaluated, selected, and executed in concert with modernization and transformation of the force.

Achieving our goal requires us to:

- Identify our needs/gaps.
- Identify solutions from existing sources.
- If the solutions aren't available, determine the priority of need for the Army R&D community.
- Develop a systematic method to quickly and efficiently implement solutions.

The Army has put several of these elements together to assist our installations.

The Army Facilities Standardization Committee (AFSC) evaluates new technologies and techniques as Army Standards for the Installation Design Standards. In addition, the AFSC will prepare for submission to the Deputy Assistant Secretary of the Army (Installations and Housing) (DASA (I&H)) a prioritized list of installation capability requirements which cannot be met by existing technologies. The DASA (I&H) will use this information as part of the Army research and development prioritization process.

The AFSC's Technology Standardization Group (TSG) has been tasked to assemble the initial list of installation capability gaps and prioritize them. The capability gaps are being evaluated against Army strategic plans. Among the criteria are:

- Assistant Secretary of the Army (Installations & Environment) Operating Objectives
- 2005 Army Modernization Plan



Regional cost estimates for rehabilitation and maintenance practices on Army training lands

by Dr. Dick Gebhart and Sarah Nemeth

The U.S. Army is responsible for managing millions of acres of land used to support a variety of training and testing activities. Increased use of this land results in deterioration that can adversely affect mission requirements and safety. Various land rehabilitation and maintenance (LRAM) practices can offset this deterioration by physically or biologically controlling erosion and stabilizing land surfaces with vegetation. These practices frequently include the use of heavy equipment and farming implements to manipulate site characteristics, install erosion control materials and structures, prepare seedbeds, apply soil amendments, and seed or transplant vegetation.

Planning, designing, budgeting, and implementing comprehensive LRAM projects requires information concerning component costs associated with erosion control and revegetation (e.g., earthwork, sediment fence, tillage, fertilizer application, seeding, etc.). However, differences in climate, geology, soils, and vegetation types between Army installations result in significant cost variability.

The U.S. Army Engineer Research and Development Center-Construction Engineering Research Laboratory (ERDC-CERL) provided guidance regarding various elements of LRAM projects in an effort to assist installation land managers. First, the researchers divided the United

States into regions with grossly similar climates, geology, soils, and vegetation types. Next, current, regional cost data from various federal, state, and private agencies of LRAM practices were obtained. Assembling and compiling cost data represented the final task of this effort.

In addition to providing regionally specific cost data essential for budgeting, planning, and designing LRAM projects, these data and other information contained in the report are useful for selecting the most appropriate practice based on relative costs and desired results. For example, the cost of drilling grass seed might be 1.5 times greater than the cost of broadcasting seed, but improved germination and establishment of drilled seed compared to broadcast seed compensates for the difference in cost, especially on highly erosive sites requiring immediate vegetative stabilization.

In general, LRAM costs were highest in Pacific Coast, Northeast, and Intermountain regions of the United States. This reflects higher cost of goods and services in Pacific Coast and Northeast regions, and greater distances to job sites coupled with reduced equipment availability and generally poorer soil conditions in the Intermountain region. Lowest land rehabilitation and maintenance costs were found within Northern Great Plains, Southern Great Plains, Central Lake, and Humid South regions of the U.S. Well-developed agricultural production enterpris-

es within these regions result in greater equipment availability, higher proportion of experienced, agriculturally oriented contractors and vendors, and generally lower labor and material charges.

The results of this project have applicability to all U.S. Army installations within the continental United States. The data presented in this report should be used with caution and only as a general reference for decision making.

It should be noted that without periodic update, the actual cost estimates presented in this report may not be representative for more than a few years. However, relative costs between different LRAM practices should remain reasonably constant. Due to the large majority of cost references obtained from the Internet, an individual may want to review the Internet during the planning and budgeting processes, as information is continually updated.

For more information about this project, please contact Dr. Dick Gebhart at ERDC-CERL, 800-872-2375, ext. 5847, e-mail:

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PWD

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- 2004 Defense Installations Strategic Plan
- The 2005 Army Posture Statement
- TRADOC Pam 525-66 Future Operating Capabilities
- Common Levels of Service
- Army Installation Strategic Plan
- Energy Strategic Plan
- Army Environmental Strategic Plan

These strategic planning documents form the basis for our installation capabili-

ty analysis as a key feature of obtaining research and development funding in support for the warfighter. Our installation facility research and development needs cannot exist nor be supported without this critical element.

The current timetable is for the AFSC to submit the initial installation capability requirements in time for the FY 08-13 POM. Installations should submit ideas and suggestions for the current and future evaluations through the Installation Design Standards website. Submissions

may also be made through the Installation Management Agency's Performance Improvement Review program.

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Transforming the environmental compliance funding process

by Col. Christopher E. Schuster

The Army is streamlining the processes used to fund resolution of environmental compliance deficiencies. The theme of the effort is *speed*.

The new environmental compliance deficiency resolution process is designed to give installations the power to handle unforeseen deficiencies arising during the year of execution more quickly and effectively.

Beginning in October, the process will allow installations to collect information, validate requirements and obtain funds necessary to fix compliance deficiencies in as little as 30 days. The new process eliminates the traditional layers of review and approval for environmental projects and provides funding directly to the installation to fix these deficiencies rapidly.

When an unanticipated issue puts an installation into a non-compliance situation, such as equipment failure in a water treatment plant or some other newly discovered deficiency, a garrison commander may submit a funding request, once the proper "fix" has been determined, directly to the Headquarters, Department of the Army office that will function as a "bank". That Army "bank" will provide funding directly to the installation for the proposed project.

The concept is not new, many Army functions incorporate the flexibility to address unanticipated, inescapable requirements; many think of it as a "hurricane" fund. When the unexpected happens, an installation will have a direct line to assistance in addressing a potential environmental violation. Program managers do not expect the process from deficiency identification to the submission of a funding request to exceed two weeks. Upon receipt of the request, the Army bank will issue the funds from the appropriate account. The details on the bank processes will be developed this summer.

The process has logical steps that assure a continuous flow from discovery to resolution. When an installation identifies a new deficiency, through an internal or external review or a regulatory notice, the installation staff informs the commander and activates the compliance deficiency resolution

cell. Normally the cell includes the Environmental Chief, the Director of Public Works, Legal Counsel, the Resource Manager, and an Operator's Representative; depending on the issue and scope, others may be added to assure success.

The cell is not constrained on how it carries out its functions; members may come together, work by phone, via computers, or by whatever means best meets their needs. The critical part is that they must minimize wait times, eliminate transportation of documents and other things, avoid non-value added activities and keep the process moving. Time is critical.

The cell starts its work by investigating the root cause of the deficiency. If the deficiency was caused by a systemic problem, leadership or supervision oversight or a flaw in the business practices applied, cell members must coordinate with the responsible officials and initiate the proper corrections.

Often correction of the deficiency will require some physical change or activity. The cell will develop alternatives to resolve the deficiency, analyze each alternative and provide a recommended course of action to the garrison commander. Developing the recommended course of action may include consultation with regulators and other stakeholders as well as investigating technologies, best practices from award-winning installations, or generally recognized standard fixes.

The cell must also determine whether the deficiency can be fixed with existing installation resources or a request to the Army bank is appropriate. The garrison commander then validates the documentation and requests the money for execution of work that can't be addressed by the installation's own resources. The validation is supported by internal analyses, calculations, and consultations.

This compliance deficiency resolution process focuses responsibility and accountability on the garrison commander. This transformation reduces a requirements validation and resourcing process that has historically taken as long as two years to a process that may be completed within a

month. Its success depends on prudent analyses and requests from the installation, and confidence in the system from higher headquarters. This process is aimed specifically at the resolution of newly identified deficiencies, not the recurring requirements and preventive actions for which installations must routinely plan; those aspects are undergoing their own transformation via separate, but linked, efforts. Fixing unexpected challenges before they become more serious minimizes total costs, precludes detrimental impacts on military mission activities, and demonstrates effective management of installations.

The changes to the compliance deficiency resolution process are part of the Army's Lean 6 Sigma process streamlining initiative. A team of Army environmental and management professionals, from the installation level on through the Army Secretariat staff, performed a "value stream analysis" to develop this transformation of the environmental funding process. A value stream analysis is an analytical tool that studies current processes, clarifies the steps and determines which ones add value to the process output, creates a vision of value-added process for conducting business, and maps out action plans to achieve the desired end state. The team members saw an opportunity for significant process improvement because the current process for addressing these potential environmental violations contained excessive delays, too many layers of reviews and approvals, and too many "hand-offs" from one individual to another. This new process, combined with predictable base operations support funding, holds the promise to significantly improve the compliance posture of Army installations and more effectively enable the Army mission.

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PWD



Relocatable building approvals in 6 steps

by David Ullrich

The decision by the Chief of Staff of the Army to transform the combat divisions into brigade sized Units of Action has required our installations to rely on the use of relocatable buildings to satisfy urgent requirements for short-term interim facilities. To satisfy realignment actions such as BRAC and IGPBS, the only long-term solution is military construction (MILCON). Ideally, realigned units would move into permanent facilities. To quickly house the Units of Action, the Army decided to use relocatable buildings for barracks, operational and dining facilities and motor pools.

It was also necessary for the Army to update its policy on relocatable buildings. As discussed in the Interim Army Policy for Relocatable Buildings, dated 21 October 2004, relocatable buildings can be purchased or leased and are to be used for pre-defined, short term periods of time. Most of the requests have been for periods between 3-7 years.

How do you request relocatable buildings? Follow the easy six steps.

STEP 1 - Pull the current guidance from <http://www.hqda.army.mil/acsimweb/fd/policy/docs/relocatablebldgs.pdf>.

This document supersedes Chapter 5 in AR 420-18. Make sure you understand the approval authorities and funding limitations.

STEP 2 - Call the Installation Support Center of Expertise (CEHNC-ISCX) in Huntsville and ask them to develop the economic analysis for the relocatable building request. HQ IMA has funded HNC to perform ALL relocatable building economic analyses and ACSIM will not accept the analyses from anyone else.

STEP 3 - After Huntsville has performed the economic analysis you can complete the relocatable worksheet. Ensure the DD Form 1391 and/or DA Form 4283 for site preparation requirements is filled out correctly and submitted for approval.

STEP 4 - Obtain a legal opinion from your supporting office of legal counsel to confirm your decision to lease or purchase relocatable buildings. The opinion will also

validate the use of either operation and maintenance funds (OMA or OMD) or procurement funds (OPA or OPD).

STEP 5a - If the total known requirement is for a 12 (or less) month lease and under \$100,000, package the request for IMA approval (this approval authority has been delegated to the IMA Region Director). Ensure enclosures 1-6 (and as applicable, enclosure 7), listed below, are included.

Step 5b - If the requirement is for a purchase or lease exceeding 12 months or \$100,000, package the request in accordance with step 6. Ensure enclosures 1-6 (and as applicable, enclosure 7), listed below, are included.

Enclosure 1: Justification

Enclosure 2: Copies of associated construction documentation (DD Form 1391 and/or DA Form 4283)

Enclosure 3: Economic Analysis, with sensitivity chart, for each facility type, prepared by Huntsville Center

Enclosure 4: Waiver request, if in non-compliance with Army Standards.

Enclosure 5: Supporting Legal Opinion from the Garrison SJA

Enclosure 6: Pictures of the types of relocatable buildings to be used and their planned placement. This may be photographs of examples of similar relocatable building projects of the same configuration, size, and type of relocatable buildings to be used on this project. This could include photographs, catalogue cuts, and/or artist renderings, with appropriate site plans.

Enclosure 7, Conditions of agreement by non-Army real property facility owner accepting placement of Army relocatable building, or conditions of agreement by Army Garrison accepting placement of non-Army relocatable building on Army real property facility.

STEP 6 - IMA installations or tenants on IMA installations send electronic request memo through IMA Region and HQ IMA to OACSIM. Special installations send electronic memo through their MACOM to OACSIM, with a copy to the appropriate

Region.

Key Points to remember:

- The current Army policy on relocatable buildings can be found at: <http://www.hqda.army.mil/acsimweb/fd/policy/docs/relocatablebldgs.pdf>.
- The USACE Installation Support Center of Expertise (CEHNC-ISCX) has been centrally funded to perform the economic analysis on relocatable building approval requests. This will help alleviate some of the garrisons' burden and minimize delays caused by the requests being returned for corrections.
- If the economic analysis shows purchase to be more economical than lease, OMA/OMD is used for purchases less than \$250,000; OPA/OPD for purchases greater than \$250,000.
- If the economic analysis show lease to be more economical, OMA/OMD is used for Operating Leases; OPA/OPD is used for Capital Leases. See the six operating/capital lease criteria in <http://www.hqda.army.mil/acsimweb/fd/policy/docs/relocatablebldgs.pdf>.
- If the relocatable request comes to IMA HQ without the 6 enclosures (7 enclosures as applicable), it will not be forwarded; it will be returned for correction. Only when the request is complete will it be forwarded to ACSIM.
- The Region Directors of IMA or the MACOM commanders of the special installations can only approve relocatable lease requests for known requirements that do not exceed a total of 1 year and that cost less than \$100,000. Only the DASA (I&H) has the authority to approve purchase requests for relocatable buildings.
- Key Contacts:
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Frequently Asked Questions

1. *How is a relocatable building defined?*

Answer: To be considered a relocatable building, the estimated funded and unfunded costs for average building disassembly, repackaging (including normal repair and refurbishment of components), and non-recoverable building components, including typical foundations, may not exceed 20 percent of the acquisition cost of the relocatable building. Typical foundations include block-
ing, footings, bearing plates, ring walls, and slabs. Typical foundations do not include construction cost of real property utilities, roads, sidewalks, parking, force protection, fencing, signage, lighting, and other site preparation (clearing, grubbing, ditching, drainage, filling, compacting, grading, and landscaping). Relocatable buildings are classified as real property if the estimated funded and unfunded costs exceed 20 percent of the acquisition cost of the relocatable building.

2. *I don't work for IMA. Who approves my requests?*

Answer: If you are a tenant at an IMA installation, the request must go through the IMA chain of command. If you work at a special installation or are part of a contingency operation, the 6 Step program still applies to your operation. If the requirement is for a 12 (or less) month lease and under \$100,000, your MACOM can approve the request. If the requirement is for a purchase or a lease exceeding 12 months or \$100,000, the MACOM will forward the request to the OACSIM. In the past, limited delegation authority has been provided to commanders in contingency operations areas.

3. *How much time does it take to get an approval from the DASA (I&H)?*

Answer: Once the approval request arrives in HQIMA, you can expect about a two to three week turn-around. This is not too bad considering all the different hands that are involved in this high profile program.

4. *What are some of the more common problems or mistakes when submitting a relocatable building approval request?*

Answer: The most common mistakes causing relocatable building requests to be returned are:

The DA 4283 is incomplete or the numbers do not match the numbers on the economic analysis.

The site maps are missing from the documentation.

The exit strategy is missing from the documentation.

The scope is ill defined.

The DD 1391 contains errors.

If site work costs are greater than \$750,000 per site, a DD Form 1391 showing the MILCON cost is required.

The numbers on the economic analysis do not match the numbers in the worksheet, particularly, Table 5-B-5, Summary of Relocatable Building Request.

5. *I need several types of buildings. What needs to be listed on the approval request?*

Answer: The approval request for a lease is the total lease, delivery, set up, sustainment, and removal costs. The approval request for a purchase is the total purchase price plus set up cost for each building type.

6. *We purchased some relocatable buildings several years ago for billeting. Can I convert or divert these buildings to administrative buildings?*

Answer: First, do not confuse these relocatable buildings with real property. They are personal property and follow personal property accountability rules. Conversion/diversion requests have no meaning in the personal property world. Second, pull out the original approval memo. If the term, use, or cost differs from the approval memo, you need to submit a new request, regardless of whether the buildings are leased or owned. Every new requirement needs a new approval. You also should also coordinate with HQ IMA (or your MACOM, if appropriate) to determine if there is a cross-leveling plan for those buildings. Third, relocatable buildings have an estimated economic life of 15 years under normal circumstances. When this age is met or exceeded, the buildings should be removed from the installation or turned in to DRMO for sale or disposal.

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Standing up the Afghanistan Installation Management Organization

by Lindy Wolner and Zeke Morrow

The U.S. Army's Installation Management Agency (IMA) and the U.S. Army Corps of Engineers (USACE) provide support to the Afghanistan Ministry of Defense (MoD) and the National Army (ANA) for the long-term management of Afghan military facilities. This article reports on the organization being created for that task and our role as advisors and mentors as part of "Operation Enduring Freedom."

Much attention has been focused on the construction of 13 ANA brigade sites throughout Afghanistan. The January edition of the *Public Works Digest* featured an article titled "Rebuilding Afghanistan – one brick at a time," which chronicles the construction of a typical brigade site. However, with over \$1 billion worth of facilities coming on-line, the challenge is shifting to the long-term operation and maintenance (O&M) of these installations. Meeting that challenge depends on the successful stand-up of the Ministry of Defense, Installation Management (MoD IM) organization — one of the "sustaining institutions" now being created to support the ANA.

The agency lead for this effort is the Office of Military Cooperation-Afghanistan (OMC-A) whose mission is the reconstruction of the Afghan security and defense sectors. OMC-A is a joint service coalition organization under the operational control of the Combined Forces Command-Afghanistan (CFC-A). LTG David W. Barno was the CFC-A commander prior to his selection as our new ACSIM.

Afghanistan has been a country at war since the Soviet invasion of 1979.

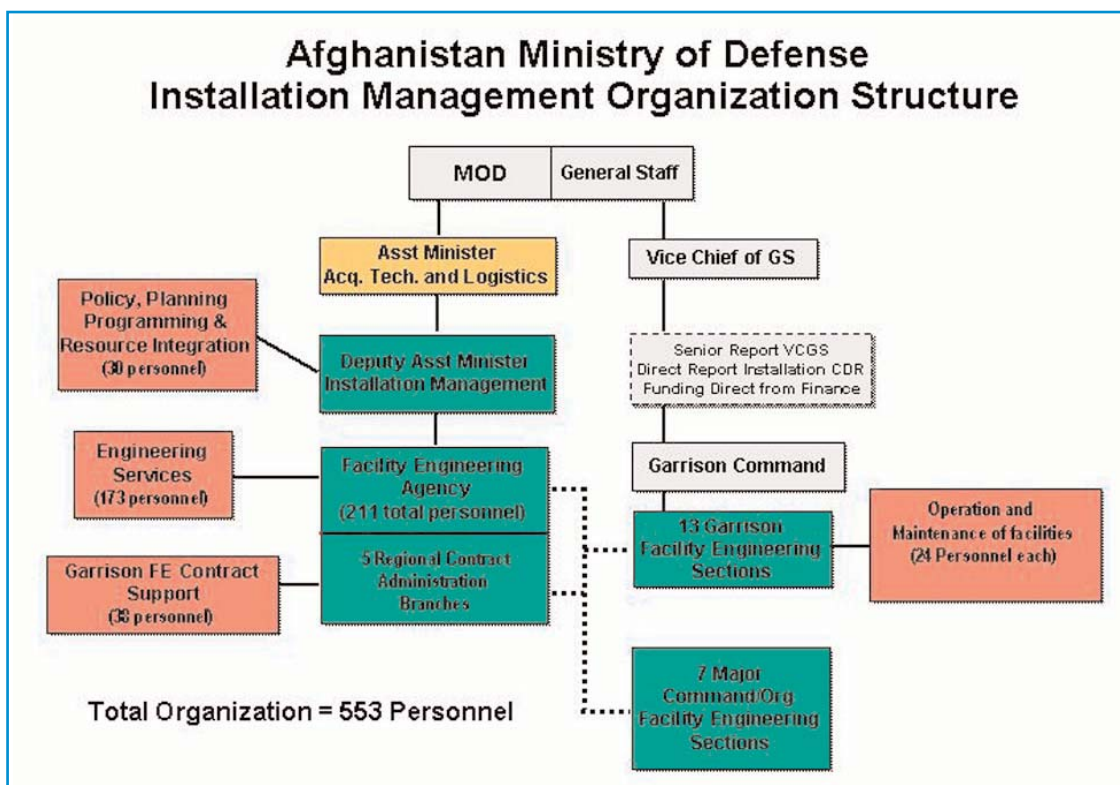
The country's government and basic infrastructure have been destroyed or severely limited. With the removal of the Taliban by U.S. and coalition forces over three years ago, there has been steady progress towards peace and stability. The overall coalition effort now concentrates on reconstruction and stabilization of a land encompassing 402,000 square miles (slightly smaller than Texas) supporting an estimated population of 28 million. That effort is being carried out in a still hostile post-conflict environment.

The newly constituted ANA will be the primary institution to provide national security with an end strength capped at 70,000 including all MOD and General Staff personnel, both military and civilian. This restructured force is required to be ethnically balanced and must overcome a culture of many senior leaders trained in Soviet-style management practices.

OMC-A assigned two deployed civilians to work with MoD-IM, one to serve as the

mentor/operational partner for Dr. Mohammed Zarif, Deputy Assistant Minister of Defense, Installation Management (DAMoD-IM) with a focus on collaboratively developing the personnel integration, real property, and master planning initiatives with the Afghan MoD staff in Kabul, and daily coordination between OMC-A and MoD-IM. The second serves as advisor and concentrates on developing the organizational structure, and policies, systems and procedures that will guide the MoD-IM in their future role of executing O&M for all ANA and other MoD facilities across Afghanistan.

The MoD-IM organization is structured in three parts: the MOD headquarters staff (IM), the Facility Engineering Agency (FEA) and various Facility Engineering (FE) sections. The IM staff and the FEA are in the DAMoD-IM chain of command under the Assistant Minister of Defense for Acquisition, Logistics and Technology. The FE sections will be





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located at each of the 13 garrisons or embedded within their intermediate commands (i.e., Logistics or Medical Command). The various FE sections are under the control of Garrison Commanders or respective departmental commands. The chart below shows the MoD IM organizational structure and end strength of 553 personnel.

The MoD-IM mission is to “Provide for long-term facility management through the operation and maintenance, renovation, and construction of facilities to support the ANA mission.”

Their Mission Essential Task List includes:

- **Policy.** Develop and enforce the standards that guide Afghan military installation management. (IM)
- **Planning, Programming and Resource Integration.** Conceptual development of the facilities. Prioritization of repair and modernization efforts to balance facilities needs with resource constraints. Integration of installation management resources (IM and FEA)
- **Operation and Maintenance.** Provide for the operation and maintenance of ANA facilities such that they can be used for their intended purpose on a sustainable basis. (Garrison FE and FEA)
- **Engineering Services.** Provide for the technical engineering and facility contract management capabilities to deliver finished infrastructure products in a timely fashion. (FEA)

Although this organization is clearly modeled after the U.S. Army system, there are some notable distinctions. The IM headquarters staff can be considered a combination of our ASA-IE, ACSIM and Headquarters IMA. The FEA is a combination of the military support portion of the Corps of Engineers and the IMA Region offices. The strategic support role of IM/FEA includes Real Property, Master Planning and Financial Planning/Budgeting for long-term system viability. Their span of responsibility will encompass all Garrisons, Regional Corps and MoD facilities, existing MoD properties and recruiting centers with the following hierarchy of task execution:

- Operation of facilities.
- Repair and maintenance.
- Minor Renovation and new work for existing facilities.
- Total renovation of existing facilities.
- New construction of facilities.
- Emergency response resource to other agencies/nation.

The results of the mentors/advisors’ work over the last two years is a detailed stand-up model or “synchronization matrix” to provide the timed sequence of all necessary resources and support for the total Afghanistan MoD-IM organization. The challenges for the next year will be the continued implementation of the synchronization matrix through the execution of detailed resource fielding plans for the building blocks of the organization to include manpower, hiring sequence, equipment, vehicles, training, facilities, and doctrine and policy development.

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The deployment challenge



Zeke Morrow (IMA), Dr.(BG) Zarif (DAMoD-IM) and Lindy Wolner (USACE) in a typical working session at MoD offices in Kabul.

There’s a continuous need for DoD Installation Management professionals to serve in “Operation Enduring Freedom” and assist the MoD IM in realizing the organization and institutional capability to carry out their mission. Contributions by past mentors have set the foundation for success in this endeavor, but there remains much work to be done to build the institutions that Afghanistan needs to offer a measure of long term security for its citizens.

The Afghan people know, better perhaps than anyone that it’s much easier to destroy than to rebuild. Rebuilding must be done right and doing things right takes time and the efforts of committed partners. Our work with the MoD IM is an important part of creating those institutions that will finish the process of reconstruction and set the conditions for long term security for Afghanistan.

For more information on what will be one of the most rewarding assignments of your career, contact Zeke Morrow or Lindy Wolner for additional information. The excitement of being part of building a national organization from the ground-up in a limited bureaucratic environment is an invigorating experience. Current deployment opportunities are posted on the CPOL website (<http://acpol.army.mil/employment/gwot.htm>) for both USACE and IMA positions. **PWD**



Corps' FRP concepts assist Army's DPWs

by Olivia Lowe

The Department of Public Works (DPW) is a vital instrument for the process of change. One issue, which requires the DPW's attention, is the removal of antiquated and unused facilities which are located on Army installations. This department obviously plays an intricate role in shaping the future footprint of an installation.

The Facility Reduction Program (FRP), managed by the U.S. Army Corps of Engineers' Engineering and Support Center in Huntsville, Alabama, was created in 2003 to assist the DPWs on Army installations in the removal of facilities, which no longer meet today's standards. The FRP is responsible for the removal of facilities with Operation and Maintenance (OMA) funds. The remaining removal activities are under the direction of the Military Construction Army (MCA).

In a continuing effort to assist installation Department of Public Work's personnel during the removal of unused facilities, the FRP has created numerous exploratory concepts and studies during the last 18 months. These concepts and studies continue to increase the body of information and advance the state of technology available, which in turn allows the DPW to make informed decisions when considering facility removal methods. Concept studies include:

- The Mobile Demolition Team Study which explored the feasibility of putting in place a traveling grinder which could reduce demolition residue to useable rubble at installations nation-wide.
- The Landfill Mining Study considered the pros and cons of excavating installation landfills to "mine" out the recoverable metal and further compact the landfill material.

Recently, two new concepts have been added to the growing list: The "Challenge: Ammo Bunker" Study and the "Shoreline Stabilization Design Shapes from Demolition Debris" Study. Both programs address the need to remove large numbers of a specific type of facility. The FRP designed these studies in the

continuing effort to secure hard data relevant to the best methods for removal and reuse of demolition debris.

"Challenge: Ammo Bunker" is a study designed to supply information concerning the most cost effective removal of concrete ammunition bunkers built on Army bases in the 1950s. These bunkers, of which there are hundreds in existence, are heavily reinforced with rebar and have thick concrete walls. The FRP, in an effort to gather essential information on costs and methods, is currently preparing the performance requirements for a competition which will directly compare three possible methods for removal of the ammunition bunkers. The competition would bring together three representative demolition methods at one installation location.

Demolition methods being considered for the removal competition include:

- Traditional demolition which uses heavy equipment to turn the building into rubble;
- Cutter technology in which bunkers are cut apart by diamond saws and large pieces are removed intact; and
- Implosion by harmonic delamination in which the concrete is caused, by sound, to crack into small pieces, leaving only the rebar standing.

The competitors will be judged using the following criteria:

- Handling of materials remaining after demolition is complete.
- Cost effectiveness per square foot to complete demolition and removal.
- Safety and site security.
- Scheduling including the amount of time required for debris removal and the disruption factor of the process to installation operations.
- A logistics plan presented by each competitor detailing how demolition would be accomplished for 50 of the bunkers on various installations.

The comparative information gathered from this competition would be used to compile a best-practices model, which could be applied during the removal of the large number of these bunkers in existence

nationwide. And, the "winner" of the competition would be given a contract to remove a minimum of 100 bunkers, thereby putting into immediate use a successful removal method.

A second study is being conducted by the Facilities Reduction Program, the U.S. Army Corps of Engineers, and the Construction Engineering Research Laboratory (CERL). The "Shoreline Stabilization Design Shapes from Demolition Debris" Study considers a possible end-use following the removal of a category of barracks known as "Hammerheads."

In these barracks, none of which is currently in use, all beams, posts, joists and rafters are of concrete construction. The FRP will determine how many barracks are available for this project and which installations have the best potential to use the program. CERL is currently studying which components and structural members of the barracks can be used for what type of shoreline stabilization application.

The U.S. Army Corps of Engineers has the responsibility for the integration, operation and navigation of all shorelines and banks of navigable waterways in the U.S. The term "navigable waterway" denotes a waterway open for commercial navigation. It is possible the concrete barracks can generate a large supply of concrete design shapes from the removal process. "Design shape" is a term that, in the demolition industry, designates that pieces have been formed for a specific purpose. Possible usage of the large concrete pieces cut and specifically shaped from the Hammerhead barracks include bank stabilization, erosion control, harbor breakwater and reef reclamation.

This study may result in the reuse of a massive amount of concrete which not only diverts waste from landfills but will also support one of the U.S. Army Corps of Engineers' primary responsibilities: the caretaking of the nation's waterways and shorelines.

The FRP's responsibility for the removal of installation facilities includes the requirement of sharing information with installation decision-makers. Contin-



This article has used a portion of an article written by: Terry Niebus, PE, CEM, President, Lakeshore Consulting (305-744-9729, niebus@aol.com) who wrote the original paper titled: ENERGY 101: Ten Ways to Reduce Facility Energy Costs or What to Look at First. The text has been changed with minor modifications to speak to the Army audience and is printed with the permission of the original author. Don Juhasz, PE, Chief of Utilities and Energy in the Facilities and Housing Directorate, OACSIM, provided the Army edits.

Ten ways to reduce facility energy costs — Where do you look first?

Where do you look first? If you are involved in energy reduction efforts, certain items always seem to be included in the list of energy saving recommendations; they tend to have a reasonable simple payback for the effort. Here is a list of what we have found to be the “top ten” of these energy saving measures. These measures are applicable to nearly every type of military facility. They are not in the order of highest payback but logically listed based on commonality of how often they appear in energy audits.

This list can be used as a general guide as to what to examine first when looking at ways to save energy and reduce operating costs. The simple paybacks shown are

based on a range of average electrical costs, and assume a capital cost for the energy conservation measure. When evaluating these measures, ensure that the utility rates accurately reflect the charges for your specific facility, and obtain pricing data and technical specifications from reputable vendors. Operating hours also impact the calculations, so make sure that your estimates are reasonable.

Ten Ways to Reduce Facility Energy Costs

1. Replace fluorescent 40W-T12 lamps with 32W-T8 lamps and electronic ballasts.

Explanation: The T8 lamps with electronic ballasts are more efficient than the standard T12 lamps with standard ballasts. In addition, the quality of lighting may be improved due to the higher CRIs (Color Rendition Index) of the T8s as compared to the standard T12s. The following chart illustrates the simple paybacks that would occur for various average electric costs if a 4 lamp-4 foot fluorescent fixture with standard ballasts and 40 W-T12 bulbs (192 W per fixture) was replaced with a 4 lamp-4 foot fixture using 32 W T8s with electronic ballasts (111 W per fixture).

At an average electric cost of 8



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ous evaluation of methodologies and practices, and the invention of cutting-edge studies and programs, creates a growing body of “best practices” knowledge. This compilation/sharing process is one of the FRP’s mission directives.

All studies and innovations feed back into the information pool designed to allow installations, the demolition industry, and other stakeholders to have access to the accumulated information necessary to effectively and efficiently deal with the removal of facilities. The ultimate purpose of this assembled information is to assist the Installation Management Agency, the Garrison Commander and the Directors of Public Works in project costing during the process of securing bids for facility removal.

The information is also designed to provide guidance in calculating which method of demolition or deconstruction will best serve each individual removal situation.

The FRP has recently created the Best

Practices ToolBox which is a comprehensive, centralized web-based program tailored specifically for facility removal efforts. The Best Practices ToolBox will assist the Department of Public Works, local Corps of Engineer Districts, demolition contractors and other planners who deal with removal of facilities to estimate costs more reliably.

The ToolBox concept is the culmination of innovative studies, documented experience and end user input which identifies best practices upon which strategic decisions can be made. Use of the ToolBox will allow better calculations “up-front” in the removal process.

The ToolBox provides estimates for calculating the percentage of materials, which may be diverted from the waste stream and into reuse. This calculation provides the end user with a benchmark or standard to estimate, for planning purposes, the type and quality of materials that might be diverted from the waste stream. It also provides an authoritative comparison by which the removal contractor’s initial proposal and final performance

concerning waste stream diversion can be measured. Through the use of the ToolBox functions, a uniform standard for guidance and criteria is in place for facility removal.

The Best Practices ToolBox is in the final testing stages and will be available in mid-July at: <https://eko.usace.army.mil/frptoolbox/index.cfm>.

The U.S. Army Corps of Engineers’ Huntsville Center and the FRP continue to work with innovative concepts and in-depth studies and to accumulate relevant knowledge to better support installation Departments of Public Works. The Program continues to pursue the goal of quickly and effectively reducing facilities, in accordance with mission and mandate, with maximum support for security requirements and minimum disruption of installation operations.

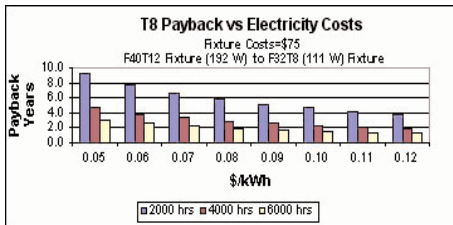
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Olivia Lowe is public and media relations specialist with Image Marketing and productions, Inc. **PWD**



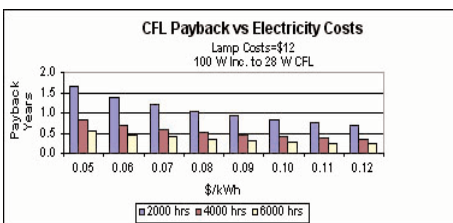
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cents/kWh and a fixture cost of \$75, the payback is 5.8 years for 2,000 hours of annual operation, 2.9 years for 4,000 hours, and 1.9 years for 6,000 hours. Obviously, more operating hours and/or higher electric costs will result in lower paybacks. *Fixture wattage – EPA Lighting Upgrade Manual.*



2. Replace incandescent bulbs with compact fluorescent lamps.

Explanation: Compact fluorescent lamps (CFLs) are very efficient when compared to the standard incandescent bulb. The CFLs use approximately 1/3 to 1/4 the wattage of the incandescent bulb to produce an equivalent amount of light. In addition, CFLs can have a rated life as high as 10,000 hours life, as opposed to 750-1,000 hours for most incandescents. The following chart illustrates the simple paybacks realized by changing out a 100 W incandescent lamp with a 28 W CFL. For this example, the price of the CFL was estimated at \$12. As the price of CFLs continues to drop, the paybacks will get lower. For an electric cost of 8 cents/kWh, and with more than 2,000 hours of operation, the payback can be about one year; for more than 4,000 hours about six months and for more than 6,000 hours less than 4.2 months. *Fixture wattage – EPA Lighting Upgrade Manual*



3) Replace incandescent or fluorescent exit signs lights with LEDs

Explanation: Exits signs should operate

continuously by law, or approximately 8,760 hours per year. If these signs are illuminated by incandescent bulbs, the wattage can be as high as 40 W. The fluorescent signs (compact fluorescent lights or CFLs) typically have lower wattages, in the 10 to 15 W range. The LED (*Light Emitting Diode*) signs operate on about two W, and therefore consume significantly less energy than the other types mentioned.

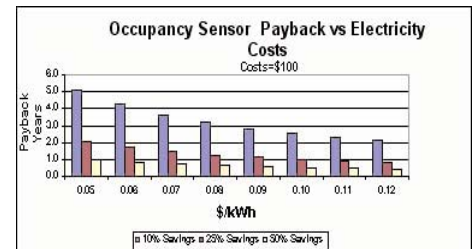
The chart below shows the simple paybacks for different electric costs if a 40 W incandescent sign exit sign is retrofitted with LEDs. Paybacks are also shown for retrofitting a 10 W CFL exit sign with LEDs. Note that the LEDs have a life of over 25 years, meaning that the maintenance and associated costs are much less than the other types of exit signs examined. For an electric cost of 8 cents/kWh, the payback can be about 8 months for incandescent replacement and approximately 3.2 years for fluorescent lamp replacement. *Fixture wattage – EPA Lighting Upgrade Manual*



4) Use occupancy sensors in areas where lighting is left on when no one is there.

Explanation: In most facilities, there are places where lights are typically left on when the areas are unoccupied. Occupancy sensors, when properly installed, can ensure that the lights are turned off when the area is vacant, and on when occupied. The energy savings from occupancy sensors depends on the total hours that the lights are normally on, and the percentage of hours that they can be turned off. Savings for an office building operating 4,000 hours annually can be in the range of 10 % to 50 %, depending on area traffic. The actual percentage of hours that the lights can be turned off can be tracked with an inexpensive lighting data logger.

The following chart shows the paybacks that could be realized for various electricity costs by installing occupancy sensors in a room with six fluorescent fixtures consisting of four, 34 W-T12 lamps with standard ballasts (164 W per fixture). For an electrical cost of 8 cents/kWh, the payback for a 10% reduction in lighting hours is about 3.2 years. For a 25% reduction the payback drops to around 1.3 years, and for a 50% reduction in lighting hours, the payback is under 8 months. *Fixture wattage – EPA Lighting Upgrade Manual*



5) Install programmable thermostats

Explanation: Programmable thermostats can be the most effective and quickest returns on investment of any of the 10 on the list. They are used to setup or setback temperatures during facility non-occupied hours, therefore reducing energy costs. These increases in temperature during the cooling season and decreases in temperature during the heating season can result in significant savings in energy usage. The savings realized from installing programmable thermostats are not easy to quantify, as they depend on numerous variables that include: efficiencies of the heating and cooling equipment, weather, facility integrity, hours of operation and setback/setup duration. Manufacturers typically overstate the percent energy savings with estimates going as high as 50%. A more reasonable and generally used estimate is 1% savings for each degree of an eight-hour setback. Our experience has been that the paybacks for installing programmable thermostats in office buildings range from 8 months to 3.5 years. The costs of programmable thermostats range from \$50 to over \$200, depending on the functions.

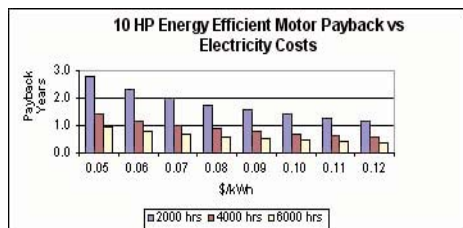


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6) Replace motors that have burned out with energy efficient ones.

Explanation: Energy efficient motors use less energy to operate than standard motors due to their higher efficiency. A few percent increase in efficiency can save a significant amount of money in the course of a year, especially if the motor has high operating hours.

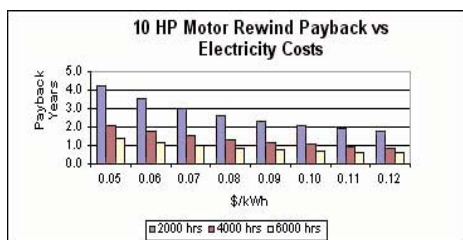
The following chart shows the paybacks for various electric rates for changing out a burned-out 70% loaded 10 HP- 86.5% efficient motor with a 10 HP- 91.7% efficient motor. The cost of the standard motor was \$294 and the high efficiency one was \$390. For an average electric cost of 8 cents/kWh, and with 4,000 hours of operation, the payback is less than 11 months. For 6,000 hours, the payback drops to approximately 7 months.



7) Replace motors with energy efficient ones rather than rewind.

Explanation: Rewinding motors can lower their efficiency and consequently increase operating costs. It is generally better, for motors less than 25 HP, to replace the motor with a high efficiency equivalent rather than rewind. Also, rewind motors may not last as long as new ones, so the long-term economics will generally favor the new motor alternative.

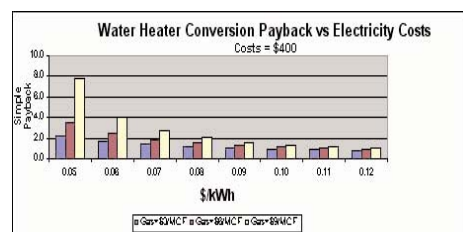
The chart below illustrates the paybacks realized by purchasing a new energy efficient motor rather than rewinding the existing one. A 2% loss in efficiency of the rewind motor was assumed. The cost of the rewind was estimated at 50% the cost of a new motor. The motor parameters used were the same as in the previous example. At 8 cents/kWh, motors operated 4,000 hours annually had paybacks of approximately 1.3 years. For 6,000 hours, the payback drops to about 11 months.



8) Replace electric water heaters with gas water heaters.

Explanation: Heating water with electricity can be more expensive than heating it with gas, even though the electric water heaters are more efficient than the gas ones. This is because the cost per Btu of gas has typically been less than electricity. Note: If this pricing hierarchy changes, due to gas shortages or other economic conditions, then the electric to gas conversion may not be favorable.

The following chart shows the paybacks realized for changing out an electric water heater with a gas equivalent at various gas and electric rates. The payback calculations assume an annual hot water usage of 30,000 gallons per year, a sixty degree temperature rise, and a \$400 installation cost for changing out an electric water heater for a gas one. The electric and gas water heater energy factor used were 90% and 70% respectively. At an average electric cost of 8 cents/kWh, the paybacks range from 1.2 years with gas at \$3/MCF to 2 years with gas at \$9/MCF.



9) Understand the utility rate structures and track billing histories

We are amazed at how little some facility managers know about their utility rates. They know the building operation and equipment inside and out, yet they don't take the time to understand *how* they are being billed; many of them have never seen the utility bills. In order to control utility costs, it is necessary to fully under-

stand the utility rate that the building is billed on. Know how the demand and energy charges are calculated, and how they impact facility operating costs.

Also, in order to save energy, it helps to understand how your building has performed in the past. Track your utility usage for at least the previous twelve months and graph this information. Commercial software programs designed to do this tracking/graphing are readily available, or you can develop your own with spreadsheets. At a minimum, track monthly demand, energy usage and dollar amounts. This will enable you to quantify savings due to energy management improvements, and can even help you spot billing errors.

10) Work with your utility representatives

The utility representative can be a valuable asset in controlling energy costs. Deregulation has placed pressure on utilities to pay more attention their current customers, especially the larger facilities. This means that most utilities want to do all that they can for their customers in order to keep them from even thinking about switching to other suppliers or generation alternatives. Here are some questions to ask your representative:

- How do my rates (schedules) work? How can I get copies of them?
- Am I on the best possible rate (schedule)? If not, how can I get on it?
- What are my rate options (for both demand and consumption)?
- Does my demand rate include a ratchet charge?
- What is the demand period?
- Do you offer any incentives or rebates for equipment replacement?
- Can you help me reduce my utility costs?

We hope this article is of assistance to you. Many of these principles apply to our homes as well as to our stewardship of our Government facilities. Application of these low-cost items can have a relatively short return on funds invested. If you have comments or suggestions, please e-mail: Don Juhasz at don.juhasz@hqda.army.mil. **PWD**



Myths of energy consumption

by Don Juhasz

The following myths routinely believed and held as fact inhibit education of Army employees in cost saving practices. Significant utility savings with very little effort or inconvenience to the employee are possible but will not occur without supervisory efforts to educate and enforce energy saving practices.

Myth: The Army does not have to pay for utilities because the Government controls the utilities. Therefore it does not matter how much utilities are used. Besides, it is a perk to use whatever amount is desired for personal convenience.

Fact: The Army is one of the largest utility customers with nearly a billion dollars a year in utility cost. A 10 percent increase in utility cost will raise the Government's expenditures over \$100 million dollars per year.

Myth: It uses less energy to maintain a building or facility at a constant temperature such as 72° F because the heating or cooling unit have to work harder to bring the building back to a comfortable temperature.

Fact: Not only do the laws of physics disagree with this widely held belief but actual studies have proven it incorrect. The savings can be approximated at 1 percent per degree of setback for every 8 hours that a building is at a reset (non-occupied) temperature. If 15 degrees offset is used for the reset temperature, 15 percent savings is achievable for each 8 hours. A higher percent will occur if greater than 8 hours per day is used and especially if weekend, holidays, and other non-use days are included where 24 hours of savings is possible. Savings of 30 percent are well within the realm of reality when all non-occupied hours are considered.

Myth: It takes more energy to turn lights on and off than to just leave them on.

Fact: It does require a surge of energy (up to 300 percent) for $\frac{1}{2}$ of a cycle ($\frac{1}{2}$ of $\frac{1}{60}$ of a second) after which the energy flow becomes steady state. Your reaction time in turning a switch off and on greatly exceeds this time (by about 15 times). Therefore,

you could stand flipping the switch off and on and the off time would offset any increase to the energy increase from the on cycle. Lamp life is in fact decreased with on and off switching, but because of the time the fixture is off during switching, the overall time between actual bulb replacement is actually increased by one second for every one second that the light is off. It takes at least the normal life hours (20,000 hours for a good florescent) to decrease its life to half by constantly switching it off and on. Bottom line: It saves utility cost if you turn off your lights every time you leave your room even for 30 seconds.

Myth: Computers and peripheral equipment last longer if left on all the time.

Fact: Computers are similar to lights and have an inrush of energy on startup. However, contrary to popular belief, research has also demonstrated that turning computers and peripherals on and off as needed is not detrimental to the equipment. Buildings with computers routinely use 50 percent more energy than those without. A computer system with peripherals rated at 300 watts at 5 cents per kilowatt-hour will cost \$131/year to operate at 24 hours/day ($300/1000 \times .05 \times 365 \times 24$). If only 8 hours per day, 365 days per year, the computer system is actually needed then that would be a savings of \$88/year (67 percent of \$131). One would reason that this is not much savings for the inconvenience of having to reboot every morning. Then you multiply it by the more than 1,000 desktop computer systems that we have that are left on all day, every day, which is now at an extra cost of \$88,000 per year, that is money that could be used for improvements or salaries or other really needed items but it is not available because it is spent unnecessarily.

Myth: Batteries and film must be refrigerated.

Fact: The only items that require refrigeration by regulation are some ALSE special batteries (not the 9V off-the-shelf ones) and a few medical items and medical specimens. Regular off-the-shelf batteries and film will

cost more to refrigerate than any increase in shelf life that results from maintaining them at a lower temperature. It would cost less to not refrigerate and replace the batteries slightly more often than to maintain the number of refrigerators in supply rooms and individual offices with the justification of battery storage. Refrigerators use several hundreds of dollars per year to operate and are really only needed in break rooms and conference rooms for support of employees and meetings. Personal room refrigerators for the personal convenience of only one individual are not authorized per IDARNG REG 11-27.

Myth: Outside building and motor pool lighting is required to be on during all hours of darkness per security regulations.

Fact: Only the bunker lights in an Ammo supply point are required to be on all hours of darkness. All other security lighting is at the discretion of the Commanding General of the facility. It has been proven that pilferage and vandalism have decreased on military facilities and school grounds where the lights have been turned out. The intruders now have to bring their own light and can be easily spotted by security forces.

Myth: Use of low mercury tubes will put less mercury into the environment.

Fact: Mercury is used as part of the process of illumination. When the mercury is expended the ends of the tubes turn black. Low mercury tubes do not last as long as regular tubes (despite the manufacture's claim that they are comparable). As a consequence, we pay more for the low mercury tubes. We also have to buy more of them because they do not last as long, and we end up putting nearly the same amount of residual mercury into the environment in expended tubes because we are using more tubes when using the low mercury units than the same amount from regular tubes. We are paying nearly four times the amount in cost. Their initial cost is nearly twice as much per tube, they last a little more than half the time, and they need to be replaced almost twice as often. Their recycle costs are the same per tube, so ➤



HNC helps secure our Nation's defenders

by Jack Holt

The Energy Savings Performance Contracting (ESPC) team scored bragging rights once again for the U.S. Army Engineering and Support Center in Huntsville, Ala. with the completion of the 82nd Airborne Division Cogeneration plant. Dr. Mike Stovall, Huntsville Center Deputy for Programs and Technical Management, helped dedicate the new, advanced Integrated Energy System (IES) here June 17, 2005.

"Fort Bragg is a prime example of what can be accomplished when a commitment to save energy and innovative resources are teamed together," Dr. Stovall said in his opening remarks. "Without the foresight and leadership of Fort Bragg we wouldn't be here today. They have proven themselves judicious stewards leading the Army and the nation in energy management and conservation."

The 82nd Airborne is no stranger to working as part of a coalition. Their cogeneration plant is a collaborative effort lead by the Fort Bragg Public Works Business Center with the prototype technology provided by the Department of Energy through Oak Ridge National Laboratory, the innovative contracting mechanism by Huntsville Center, and the energy expertise and construction capabilities of Honeywell Building Solutions. The team effort com-

bines to improve the energy infrastructure, reduce energy consumption, and increase energy security for All American Division.

"The ESPC program operates on two guiding principles, 1.) Put more capital in to capital improvements from private industry, and 2.) Improve energy efficiency," Dr. Stovall explained in an interview later. "We work in concert with the installation as the contracting experts and to facilitate the transfer of technology to meet the installations needs."

For ESPC program projects the contractor funds the projects up front and provides and maintains infrastructure improvements from which the contractor is paid from the savings the improvements generate. This innovative concept was developed in response to Presidential Executive Orders 12901 and 13123, which call for government agencies to reduce energy consumption by 30% and 35% respectively by the year 2010.

"The Department of Energy diligently strives to identify all opportunities available to improve system efficiencies and squeeze the most out of our countries valuable energy resources and Honeywell has been very resourceful in their synergistic approach of combining projects to maximize energy reduction and energy savings here at Fort Bragg," said Stovall.

The IES installed at the 82nd's Central Heating Plant provides heating, cooling, hot water and power generation to surrounding buildings. A multi-fuel 5-MW gas turbine generator is the heart of the system which reduces Fort Bragg's dependence on outside power sources. Waste heat from the turbine generator is directed to a heat recovery steam generator to produce hot water for heating.

During the warmer months, the exhaust gas drives a first-of-a-kind absorption chiller, which produces 1,000 tons of chilled water for and air conditioning. Use of turbine exhaust for heating and cooling the 82nd Airborne Division barracks and buildings improves fuel efficiency from 33-35% to over 70%. The ESPC Performance Contract should cut total energy costs by 25% and improve the quality of life for the 44,000 soldiers and their families living on the 84-year old post.

"This is another tool to take care of soldiers," Stovall said. "Huntsville Center exists to take care of soldiers and this is a great illustration of team work and partnering between the Corps of Engineers, the installation and private industry to take care of soldiers."

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PWD

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there is no financial or environmental value in using them.

Other interesting points:

- Women on the average need room temperatures higher than men (by about 3 degrees). The elderly (regardless of gender) need room temperatures warmer by an average of 1 degree for each 10 years over 30.

Conclusion: Any common areas or shared areas will not be comfortable to everyone. Changing an occupant to an area or office will normally require an air-flow adjustment to meet his/her personal comfort level.

- Personal resistance heaters although not currently authorized by IDARNG REG 11-27 are the only way in some areas to solve personal comfort issues. The problem is that they are not monitored nor is there any accountability. When left on when no one is present, they attempt to maintain a space at a temperature using a more expensive type of heat (electricity) and defeat any and all savings from using natural gas and the use of non-occupied setbacks. They are also a significant fire hazard.

Conclusion: Resistance heaters should be authorized by exception in writing by the area supervisors. Individuals and supervi-

sors should be held accountable for failure to monitor and turn off such devices when not needed. There are power strips available that have occupancy sensors placed near a desk or in an office that will turn off appliances when the person is not present. This would solve much of the problem with abuse of resistance heaters. The strip is a Watt Stopper 8 outlet power strip (IDP-2050) (800-879-8585).

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Don Juhasz is the Chief of the Utilities & Energy Team in the Facilities Policy Division, ACSIM.

PWD



An Army Energy Strategy for Installations and the Energy Campaign Plan

by David N. Purcell

The Office of the Assistant Chief of Staff for Installation Management, Facilities and Policy Division, has initiated the development of a formal Army Energy Strategy for Installations and the Army Energy Campaign Plan.

The Army Energy Strategy consists of five major goals:

- ✓ *Eliminate energy waste in existing facilities;*
- ✓ *Increase energy efficiency in renovation and new construction;*
- ✓ *Reduce dependence on fossil fuels;*
- ✓ *Conserve water resources; and*
- ✓ *Improve energy security.*

The Campaign Plan will be a "living document." It will present the Army's program of energy investment priorities, technology focus, legislative and policy initiatives, and mission considerations necessary to achieve our long-range energy objectives. In addition, it will form the basis of Army policy and funding for the next 25 years and begin the process of coordinating our plan for energy resources for the future and ensure it is in concert with your own long-range energy and water objectives.

The development of the Campaign Plan is a collaborative effort including representatives from industry, DOD, sister services, other federal agencies, and the Army staff. All working together to coordinate our efforts so we are all progressing in the same direction and benefiting from each other's experiences and knowledge.

To date, the OACSIM, Facilities Policy Division, has conducted three meetings to introduce the Army Energy Strategy and process for development of the Energy Campaign Plan. The first session was conducted on 19 May 05 with thirty representatives of industry. The meeting consisted of a briefing on the five goals of the new Army Energy Strategy; discussion on the development of the detailed energy and

water campaign plan; role for industry to help define the future energy environment, emerging technologies, and management practices that can support the strategy and execution of the campaign plan; breakout sessions to allow small group discussions focused on specific energy/water technologies.

The second meeting with sister Services, OSD, COE, and DOE, was conducted on 16 June 05 from a VTC facility within the Pentagon. Joining the meeting via VTC were representatives from RDECOM at Fort Belvoir, Va., and White Sands Missile Range, N.M. The focus of this session was to present the Army Energy Strategy and to request participants assistance/ and coordination on the development of the Energy Campaign Plan.

The third meeting with Army stakeholders was conducted on 20 June 05 from a VTC facility within the Pentagon. Representatives from environment, financial management, budgeting, USACE, and USAAA were present. Joining the meeting via VTC were representatives from IMA/Southwest Region and ERDC-CERL.

An inter-house writing session was then conducted on 22-23 June 05 in the offices of Battelle in downtown DC. During this session, the framework for the Campaign Plan was created and planning for the follow-on actions was finalized.

The next step is a continuation of the Campaign Plan writing session in the form of an assimilation workshop 12-14 July 05. During this session, input from industry and then Army stakeholders will be reviewed and consolidated.

The culmination of this effort will be a presentation of the results of the Writing Team's proposed first draft of the Campaign Plan to the Army attendees at the Army Workshop conducted following *Energy 2005* in Long Beach, Calif., in August. After the Army Workshop, we will

begin the formal staffing of the Campaign Plan with all MACOMs and Army Staff. We hope to be prepared to publish the Army Energy Campaign Plan #1 by December.

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(Editor's Note: The Army Energy Strategy was signed by Chief of Staff Gen. Peter J. Schoomaker and Secretary of the Army Francis J. Harvey on July 8, 2005.) **PWD**

Bush to agencies: Kill off federal "energy vampires"

Your office—it's full of vampires. The building you work in is infested with vampires, sucking juice day and night. Only it isn't blood, it's electricity that keeps these vampires alive. Energy vampires.

That's why President Bush wants agencies to purchase electrical and electronic equipment from companies that produce equipment that consumes no more than 1 watt of power while in the standby or sleep mode.

PWD



Army's holistic approach to a new Barracks Strategy

by Suzanne Harrison

The Army is moving forward with one of the most overarching and comprehensive changes in recent history to the long-range strategy in repairs, management and assignment policy for the permanent party Unaccompanied Personnel Housing (UPH) program. Components of the strategy have already begun implementation in fiscal year (FY) 05 with anticipated full scope transition to completion by 2008.

In Oct 04, the Assistant Chief of Staff for Installation Management (ACSIM) developed a program to address health, life, and safety deficiencies for enlisted barracks in the United States under the banner of "Recruiting and Retaining an All Volunteer Force" for the entire permanent party barracks program. This initiative became known as the Barracks Triage Program.

During the same time frame, OACSIM pulled together a team of experts consisting of representation across the Installation Management Agency (IMA), Army Staff, Secretariat, Surgeon General (Office of Preventative Medicine), and with assistance from the Office of the Secretary of Defense (Acquisitions, Technology and Logistics) to approach the barracks program from a holistic perspective. The overall objectives were to identify a common living standard, find out how the other Services were tackling this issue, develop and cost out potential recommended solutions, identify a timeline to execute these fixes to the entire process, and to include the UPH privatization study results recently compiled by the Assistant Secretary of the Army for Partnerships and Privatization (ASA (PP)) in the holistic strategy.

Formation of the ASA PP UPH privatization task force was approved in late Apr 04 by the Acting SECARMY and CSA to address UPH privatization using the authorities available in the 1996 Military Housing Privatization Initiative. Oversight of the UPH Task Force was provided by an Executive Council chaired by the DASA (P&P), OASA (I&E) and included membership and participation from a myriad of ARSTAF and Secretariat personnel. In-depth financial feasibility analysis and desirability studies were



Barracks Upgrade Program renovation of volunteer era barracks at Fort Stewart, Georgia.

completed at six locations.

Based on the findings, the Executive Council was to present to the Army leadership. The DAS directed the study findings of the privatization task force study be included as an element of the emerging Holistic Barracks Strategy that was being developed at the time of the completion of the study (Nov-Dec 04 timeframe).

The Navy has several ongoing pilot programs being worked at this time. Their San Diego project made it through many hurdles to potential late 2005/early 2006 award, with the other two projects being worked at this time. The Army is waiting for these results to make future decisions on whether or not to pursue any barracks privatization.

Through several months of intense study and analysis, and many presentations to vet the proposals with Army Staff leaders and Council of Colonels, the ACSIM presented a holistic proposal to the Executive Office of the Headquarters (EOH). The EOH, consisting of the Secretary of the Army (SA), the Chief of Staff of the Army (CSA), the Vice Chief of Staff of the Army and the Sergeant Major of the Army approved the full spectrum of recommend-

ed courses of action in late Jan 05:

- Validate and fix (repair) life, health and safety deficiencies in U.S. barracks.
- Move single Staff Sergeants (SSGs) off post in the continental United States (CONUS), Alaska and Hawaii.
- Transition geographical bachelors (all ranks) out of the barracks in CONUS, Alaska and Hawaii.
- Centralize barracks management and focus a sustainment funding stream
- Continue the Barracks Modernization Program; Barracks Upgrade Program (BUP) and Military Construction, Army (MCA) Whole Barracks Renewal Program.
- Learn from the Navy's privatization of barracks efforts.

The Barracks Improvement Program to validate and fix (repair) life, health and safety deficiencies was formally established with an estimated cost of \$250 million for barracks repairs in the United States. In late Jan 05, the commitment for FY05 funding had been realized. Headquarters, IMA identified specific barracks in need of repair and is executing the BIP program through their regions with ACSIM oversight. The BIP program consists of approximately 340 barracks buildings for about 40,000 Soldiers. The goal is to obligate all funds by Jul 05 and complete work by Jan 06 with as much work to be completed without relocating Soldiers.

The health, life and safety issues to be corrected in several hundred barracks buildings are as follows:

- Remediate and clean mold/mildew.
- Repair Heating, Ventilation and Air Conditioning (HVAC) to sustain comfortable ambient conditions.
- Repair roof leaks.
- Repair non-operational latrines/shower heads and plumbing fixtures.
- Repair safety risk items (i.e., loose floor tiles, stair treads, broken door exit hardware).

The policies that directly and immediately affect Soldiers are moving single SSGs off post and transitioning geographical bachelors (all ranks) off post in the



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United States. These assignment policies have been studied many times and discussed numerous times in many forums. This is a significant change in Army culture and has been needed for many years. These changes will allow the adequate inventory to more closely match the validated requirements.

Moving single SSGs off post in United States policy memorandum issued in Mar 05 identified the SA approved change. This policy change relocates single Staff Sergeants to off-post community housing and to receive Basic Allowance for Housing (BAH). Because of the changing troop strengths for mobilization, many SSGs were already living off post at the time of the studies.

In general, we anticipate the remaining SSGs to transition off post as the BIP is completed. Staff Sergeants can remain in their current billets until they are reassigned. When SSGs have a permanent change of station to another duty station in the 50 United States, they will live off post. The second assignment policy change is to move geographical bachelors off post in the United States. Soldiers eligible for BAH at the with-dependent rate and are voluntarily separated from their family members for personal reasons are geographical bachelors. Another assignment policy memorandum was issued in Apr 05 identifying the SA approved change. The new policy does not authorize geographical bachelors to occupy permanent party barracks unless Soldier is identified as key and essential personnel or by exception as determined by the Garrison Commander.

In both cases, all affected Soldiers should plan accordingly and unit counseling should occur prior to moving off post or permanent change of station. Soldiers should obtain assistance through their local Housing Services Office or Community Housing Relocation and Referral Services office to locate suitable off post rentals or for home purchases.

The transportation and the local finance and accounting support offices have also been informed of this change and are available for assistance in answering specific

questions pertaining to eligibility.

Worldwide implementation for Central Barracks Management (CBM) and providing a focused funding stream for sustainment repairs is currently being developed. This is a key component to the success of this new holistic strategy.

The SA approved directing central management and focused sustainment at an estimated cost of \$260 million/year starting in FY06. As most of the housing and engineering professionals in the Army are aware, if not all services, the current system for managing and funding sustainment repairs for barracks and unaccompanied officer housing management is inconsistent and disjointed across the installations.

Central Barracks Management is not a new concept to the Army. There are many installations worldwide that accomplish assignments to UPH through a central process either managed by a civilian or military workforce.

To test the effectiveness of this concept on a large scale with a war-fighting/deployable unit, and with some foresight in mind, the ACSIM funded a pilot program for approximately 5,000 Soldiers (6,000 spaces) for the 4th ID at Fort Hood, Texas, in Oct 04. Results of this pilot and the lessons to implement are being tabulated now for inclusion in the new worldwide program.

In general, focus of the new CBM that will be implemented worldwide with "fenced" sustainment funding will be developed around the following concepts:

- Become the champion for Barracks issues for all accountability.
- Assign and terminate rooms with effort in maintaining a sense of unit integrity.
- Identify, track, order and plan requirements for maintenance (all types).



Soldiers training at Fort Gordon, Georgia.

- Execute accountability of collecting damages for non-fair wear and tear.
- Control issuance of statements of non-availability to maximize utilization.
- Perform centralized furnishings management.

As with any funded Army program, defending the barracks modernization program providing enlisted barracks for 136,000 permanent party Soldiers at the 1+1 or equivalent standard remains a top priority. The third Barracks Master Plan for permanent party was issued in 2004 with an update anticipated in the summer of 2005. This plan articulates program details and is the tool for planning and programming the Barracks long-range plan. The requirements are based on validated single Soldier population with major changes forthcoming in Army Modular Force (AMF) and pending stationing actions.

Currently, the Army will not meet its 2008 funding buyout goal for barracks modernization because of demographic changes and 5K single Soldiers returning to undetermined United States locations even though barracks remain high priority for facility modernization with \$800 million-\$850 million/year funding level. About \$3 billion remains in the buyout program before adjustments for emerging requirements of AMF and Base Realignment and Closure are realized.

Several articles have been published in regards to these changes on the ACSIM web page, in Army News Service



The full spectrum Barracks Strategic Plan

by George Lloyd

Since 2002, the Army has reported the progress of its comprehensive permanent party barracks modernization program via the Barracks Master Plan (BMP). Past BMPs articulate the history of the program and the various new construction or modernization of existing barracks projects planned and executed to provide modern, state of the art living accommodations for the Army's single Soldiers. The Army's goal is to provide barracks accommodations at the 1+1 or equivalent standard. Our typical 1+1 or equivalent standard consists of one module of 2 separate bedrooms joined by a common bathroom and a kitchenette service area. The last BMP update was published in 2004.

In 2005, the BMP will transform into the "Barracks Strategic Plan (BSP)." We will use the successes of the BMP as well as combine all various barracks programs and processes used to modernize and maintain the barracks inventory. The BSP will report the current and projected status for planning, programming and execution of the Barracks Modernization Program, Operational Readiness Training Complexes (ORTC), Trainee Barracks, and the Holistic Barracks Strategy.

The Barracks Modernization Program modernizes the Army's barracks inventory used by permanent party single soldiers to the 1+1 or equivalent standard. Operational Readiness Training Complexes provide a

dual mission; transient collective training for both Active Component (AC) and Reserve Component (RC), and serve as a RC mobilization/demobilization facility complexes. Initial Entry Trainee Complexes support the Army's training missions: Basic Combat Training; Advanced Individual Training (AIT); One Station Unit Training (OSUT) and reception barracks.

The Holistic Barracks Strategy consists of several actions for the permanent party barracks program approved by the Secretary of the Army in January 2005 for execution in both FY05 and FY06. In summary, the Holistic Strategy provides funding to fix (repair) life, health and safety deficiencies; move single staff sergeants offpost in the Continental U.S. (CONUS), Alaska and Hawaii; move geographical bachelors (all ranks) off post in CONUS, Alaska and Hawaii; centralize barracks management (CBM) and provide a focused funding stream for sustainment repairs; continue the Barracks Modernization Program; and



The 593rd Combat Support Group Brigade HQ building at Fort Lewis, Washington.

learn from the Navy's privatization of barracks effort.

Previous editions of the BMP are currently available on the internet. Plans are to publish the 2005 BSP on the OACSIM website by August 2005. For more information, check out the following web page: <http://www.hqda.army.mil/acsimweb/homepage.shtml>.

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George Lloyd is the Housing Management Specialist and Strategic Planner for the Army UPH Branch, Housing Division, Facilities and Housing Directorate, OACSIM. **PWD**

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(ARNEWS) on the Internet, the DPW Digest, the Association of the US Army (AUSA), and local military and private newspapers worldwide. Additional information is available on the ACSIM Internet page at the following web address: <http://www.hqda.army.mil/acsim/homepage.shtml>

We anticipate additional efficiencies and effectiveness in the upcoming changes in policy, central focus of management and sustainment funding that will increase

the quality of life for our single Soldiers. We are pleased this strategy has high visibility in the Army and is under the spotlight for making sure we carve out a future that promulgates the quality housing for our single Soldiers comparable to the citizens they chose to defend.

These are major changes in Army culture and it takes courage to see them through. This holistic approach of repairing the barracks to a common living standard for all single permanent party Soldiers, building new barracks where

deficits exist, realigning the assignment policies to more closely match the Soldier population it supports, reinforcing the focus of property management and facility sustainment funding by creating an installation champion is both good for the Soldier and the Army.

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Suzanne Harrison is the Army UPH Branch Chief, Housing Division, Facilities and Housing Directorate, OACSIM. **PWD**



Barracks Transformation

by George Mino

MILCON Transformation and the Army Modular Force (AMF) Transformation are having a profound impact on barracks programming, master planning, design, construction, and operation.

Programming

Compared to a current force brigade, an AMF brigade combat team (BCT) requires more barracks spaces (rooms) due to the addition of new capabilities. Also, more spaces are needed due to an increase in the average single-to-married Soldier ratio. These factors will raise the total number of required spaces even with an offset caused by a new Army policy that gives single staff sergeants (E-6) a housing allowance to live off-post.

While the number of spaces is going up, barracks unit prices (\$/SF) on the DD Form 1391 are going down. In the past, barracks unit prices were often programmed at the *de facto* limit established in the annual Tri-Service facility unit cost tables. However, in response to Army Leadership direction to reduce construction costs and durations, average barracks unit prices on DD Form 1391s will decrease due to greater use of industry construction standards and design-build procurements.

Master Planning

Most new barracks buildings are three stories, but the additional barracks spaces in a BCT may require more buildings with four or more stories for constrained sites. Barracks with five or more stories must have elevators. Another change is the barracks relationship with Company Operations Facilities (COFs). The Army G-3 and Facility Standardization Committee in May 2004 approved new Army Standards that require new COFs to be located with their associated Tactical Equipment Maintenance Facility (TEMF) in an Operations Complex (with rear of COF opening to TEMF hardstand). Waivers may be submitted when site constraints preclude doing this. Ideally, barracks should be located within walking distance of their associated Operations Complexes.

Another BCT master-planning change is to de-emphasize the grouping of barracks

buildings by battalion. Since there are likely to be more force structure changes, all new barracks for a BCT should be sited together, where practical, to accommodate changes in the size and number of battalions in a BCT.

Design & Construction

Under MILCON Transformation, facility designs should be based on industry standards and only incorporate unique military requirements where there are compelling operational or regulatory reasons, e.g., antiterrorism force protection (ATFP), sustainable design, statutes, Unified Facilities Criteria, etc. Also, design-build contracts and performance versus prescriptive standards should be used to seek innovative industry solutions and best business practices. Modular construction and/or structural panels should be encouraged where practical and cost effective.

For a barracks building, the comparable facility in the private sector is an apartment building, which typically comes in different quality levels, e.g., low/budget, average/standard, high/luxury. Our goal is to seek an average overall quality level except for certain features where a higher quality level is prudent such as for doors and finishes.

Barracks built to apartment standards, and four stories or less, could offer a potentially large cost savings since they would qualify for residential Davis-Bacon labor rates, which in some areas can be up to 30 percent less than building labor rates. For this reason, it might be prudent to separate the barracks contract from the contract for the other buildings in a BCT complex. Consistent with the goal of building to apartment standards, local requirements (from the installation and USACE design district) need to be reviewed for military



Typical apartment complex built to industry standards.

necessity, reasonableness, and life cycle cost effectiveness. If a requirement doesn't seem warranted, a waiver request should be submitted.

Operation

The Army is changing the way barracks are operated. In January 2005, the Army Leadership approved transitioning control of barracks buildings from unit NCOs to the installation housing office. NCOs would still be responsible for room assignments and good order and discipline. With this change, we hope to make Soldiers more accountable for damages and obtain Congressional approval to expand or make permanent the special authority to add commissioning to MILCON projects, i.e., multi-year "extended warranties/service agreements" on selected building systems.

The Army Leadership has challenged us to use MILCON Transformation principles to build facilities better, faster, and cheaper. This is wholly consistent with our goal to match the quality of barracks with the quality of service that Soldiers provide to the Army and the Nation.

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George Mino is the Barracks Construction Program Manager for HQ Department of the Army, Directorate of Facilities and Housing, OACSIM.

PWD



Barracks policy change reflects holistic strategy

by Vernona D. Aslim

In a continued effort to provide quality housing for single Soldiers and to create a better tool in matching up the programming and requirements for unaccompanied personnel housing (UPH), another housing policy for single Soldiers has been updated by the Army's Office of the Assistant Chief of Staff for Installation Management (OACSIM).

The Army has instituted a change in housing eligibility policy for voluntarily separated Soldiers (geographical bachelors). Soldiers entitled to basic allowance for housing (BAH) at the "with dependent" rate, who are voluntarily separated from their family members, are no longer authorized assignment to permanent party barracks in the continental United States, Hawaii and Alaska. The policy does not apply to overseas locations.

This change comes at a time when the

Army is making numerous changes in the way it houses single Soldiers via the Holistic Barracks Strategy approved by the Secretary of the Army in January of 2005. In March 2005, the Army already authorized single Staff Sergeants to reside off post and provided the Installation Management Agency \$250 million to repair the Army's most deficient barracks under the Barracks Improvement Program (BIP).

Geographical bachelors in all rank categories will transition to local community housing through attrition whether caused by permanent change of station (PCS) orders, renovations being made through BIP, deployment, or for the convenience of the Government as determined by the local command. The local on-post Housing Services Office (HSO) or the



Barracks at Fort Carson, Colorado.

Community Housing Relocation and Referral Services (CHRRS) is ready to assist Soldiers in securing affordable and safe off-post properties whether they chose to rent or purchase homes. For more information, see "Hot Topics" on the ACSIM web site:

<http://www.hqda.army.mil/acsimweb/homepage.shtml>. **PWD**

Transient training ORTCs

by Charles Huffman

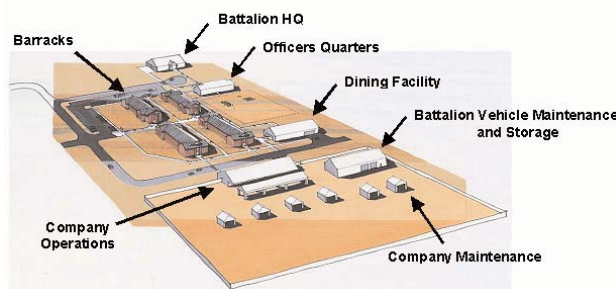
The Army Reserve Components are a critical part of today's total force supporting Operations Iraqi Freedom and Enduring Freedom. Citizen Soldiers integrating into active forces are trained and mobilized from transient training facilities. The quality of these transient facilities has adversely impacted both the mobilization of Army personnel and the Army concept of Train-Alert-Deploy. Seeking to eliminate this readiness issue, the Army is taking positive steps to develop solutions and eliminate deficits in transient training facilities.

The shortage in transient training facilities began to develop from a lack of replacement construction over the last 60 years and the Army's decision to eliminate WWII wood facilities beginning in the early 1990s. The lack of transient training facilities together with current operations supporting the Global War on Terrorism have forced installations to implement a variety of work arounds to house the large number of Reserve Component (RC) Soldiers being mobilized. This facility shortfall

has also led to increased difficulty in supporting recurring transient training requirements for the RC as well as Active Component (AC) Transient Collective Training. Construction of Operational Readiness Training Complexes (ORTCs) will alleviate this facility shortage and enhance training readiness.

The Army is pursuing a new approach for the facility requirement by developing an ORTC Army Standard Design. The design provides economical, essential housing, dining, admin and operational facilities for approximately 752 Soldiers per battalion to accommodate transient training and mobilization/demobilization activities. This new design approach will provide efficiencies in troop training and mobilization as well as ensure citizen Soldiers being called to duty will be trained in world-class facilities for essential mission readiness. We are making progress in obtaining an approved

Typical ORTC Battalion Layout



design and securing funding.

The fiscal year 2005 budget supplemental was approved in May of 2005. Part of it includes a battalion-sized barracks project each at Forts Bliss, Carson and Riley. Each project constructs housing for approximately 672 Soldiers for Army RC mobilization/demobilization. These barracks will also serve as a long-term Transient Collective Training mission for both RC and AC Soldiers.

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Charles Huffman is a general engineer in the Army UPH Branch, Housing Division, Facilities and Housing Directorate, OACSIM. **PWD**



Basic Combat Training complex– victory starts here

by Vernona Aslim, Matt Kirmse, Barbara Koerner

Victory starts here – is the charge to trainees reporting for basic combat training at Fort Jackson, S.C. Fort Jackson is one of the Army's five basic training sites and home to the Army's second newly constructed Basic Combat Training (BCT) complex, with the first BCT complex completed at Fort Leonard Wood, Mo., on March 2004.

On a March day in 2005 under Carolina blue skies, the ribbon was cut on Fort Jackson's first BCT complex and dedicated to the memory of Private Joseph Jurewic, who died during a training exercise at Fort Jackson on 1 Dec 2003. The new residents of the complex are the Cadre and Soldiers of the 2nd Battalion, 39th Infantry Regiment.

This \$65 million project houses 1,200 initial entry Soldiers with immediate access to training, living, dining, and administrative spaces, along with a configuration suited for gender-integrated training. The complex is functionally designed for a Training Brigade to efficiently maneuver trainees through their rigorous daily schedule. The functionality of the complex is immensely important, maximizing mission function and efficiencies. In a tight training cycle, it is important that every minute of the training day is fully utilized and not a minute wasted.



Soldiers training at Fort Jackson, South Carolina.

Detailed design consideration was even given to a mundane activity like hand washing; however, a well-designed hand-washing area keeps trainees healthy and in cycle, as well as moving them efficiently through the dining facility. From concept to construction, experts ranging from Drill Sergeants to Training Brigade Commanders to Training and Doctrine Command (TRADOC) staff members were consulted to design the optimal facility.

The proximity of buildings within the complex reduces the need to transport trainees during the training day for meals and exercising; again maximizing available training time. Covered training areas provide protection during inclement weather and a training pit in the center of the complex has a rubberized running track reducing stress injuries.

Before the new complex was construct-

ed, trainees were training in inefficient 1950/60s "rolling pin" barracks or aged 1970s "starship" barracks, the precursors to this modern complex configuration. These buildings often suffered failing major components such as ventilation and heating systems, plumbing, hot water capacity and roofs.

Historically, little money has been dedicated to revitalizing training barracks; however, as permanent party barracks modernization program draws to an end, funds are expected to become available for planning and programming future BCT complexes, as well as revitalization of existing facilities. Both the Fort Leonard Wood and Fort Jackson complexes were funded in the MCA program as a Congressional add.

With the completion of the Army's second BCT complex, the future complexes and Soldiers training in them will benefit from integration of good design and functional necessity.

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Barbara Koerner, Vernona Aslim and Matt Kirmse are members of the Army Barracks Team, Army Housing Division, ACSIM. **PWD**



Barracks building with exercise area at Fort Jackson.



DoD names winners of Commander in Chief's annual award for Installation Excellence

Secretary of Defense Donald Rumsfeld recently announced the winners of the 2005 Commander in Chief's Annual Award for Installation Excellence.

They are:

Fort Stewart, Hinesville, Ga.

Marine Corps Base Camp Lejeune, Jacksonville, N.C.

Naval Base Kitsap, Silverdale, Wash.

Misawa Air Base, Japan

Defense Distribution Depot San Joaquin, Calif.

The Commander in Chief's Annual Award for Installation Excellence recognizes the outstanding and innovative efforts of the people who operate and maintain U.S. military installations. The five recipients of this highly competitive Presidential award were selected for their exemplary support of Department of Defense missions.

Excellent installations enable better mission performance and enhance the quality of life for military men and women and their families. Each winning installation succeeded in providing excellent working, housing and recreational conditions for the people assigned to that installation.

The 2005 Commander in Chief's Award ceremony is scheduled for Wednesday, August 17, in the Pentagon Auditorium. The ceremony is open for media coverage. **PWD**

IMA announces Fire & Emergency Services Award winners

The Installation Management Agency has announced the Army's top fire department and fire fighters for 2004. Here are the winners:

Fire Department of the Year

Winner: *Fort Bliss Fire & Emergency Services Department, Texas*

Runner-Up: *Fort Bragg Fire & Emergency Services Department, N.C.*

Civilian Fire Fighter of the Year

Winner: *Fire Fighter Richard Smith, Fort Lewis Fire and Emergency Services, Washington*

Runner-Up: *Fire Prevention Inspector Sabine Searles, 235th Base Support Battalion, Europe*

Military Fire Fighter of the Year

Winner: *Specialist Benjamin S. McLellan, Fort Lewis Fire and Emergency Services, Wash. (McLellan is now a civilian Fire Fighter/EMT employed at Yakima Training Center)*

Runner-Up: *Specialist Mark O. Tierce, Fort Hood Fire and Emergency Services, Texas*

Civilian Fire Officer of the Year

Winner: *Fire Inspector Joseph A. Hightower,*

Anniston Army Depot, Ala.

Runner-Up: *Deputy Fire Chief Christopher L. Fletcher, Area III Fire and Emergency Services, Korea*

Military Fire Officer of the Year

Winner: *Sergeant First Class Wayne Reinhardt, Fort Leonard Wood, Mo.*

Runner-Up: *Sergeant First Class Rickey Williams, Fort Hood Fire and Emergency Services, Texas*

Heroism Award (Team)

Winner: *Fire Chief Edward C. Budnick, Fire Inspectors Robert M. Farrell, Sr. and Thomas S. Stanford, Aberdeen Proving Ground, Md.*

Co Runners-Up:

Sergeant First Class Clarence L.

Haubner, Fort Lewis Fire and Emergency Services, Wash.

Specialist Mark O. Tierce, Fort Hood Fire and Emergency Services, Texas

Congratulations to all! Winners will be recognized at the Army Awards Luncheon currently scheduled for Monday, 15 August 2005, during the annual DoD F&ES Training Conference in Denver, Colo.

POC is Charles Butler, HQ IMA, (703) 602-4641, e-mail: charles.butler@hqda.army.mil. **PWD**



Fire Chief Billy Cannedy (front row center) and 39 of the 94 fire fighters from Fort Bliss, the U.S. Army Fire Department of the Year.



Fort Leonard Wood NCO named Army Fire Officer of the Year

by Shatara Seymour

The Department of the Army has selected Sgt. 1st Class Wayne Reinhardt, U.S. Army Engineer School senior training and developer writer for firefighters, as the Army Military Fire Officer of the Year.

Reinhardt claimed the title for the Installation Management Agency and the Northwest Region.

When Soldiers exemplify themselves and rise above Army standards, they often are recognized for their accomplishments and ability.

Reinhardt is dedicated to mission accomplishment, said Russ Hinkle, USAES specialties branch chief in his nomination of Reinhardt.

Hinkle said Reinhardt served as the sen-



Sgt. 1st Class Wayne Reinhardt

ior training developer for the Army's firefighters, managed and developed multiple training products designed to support the Army's training efforts for both individual firefighters and firefighting units.

While assigned to Fort Leonard Wood, Reinhardt produced two firefighting training manuals six months ahead of schedule without compromising quality of the final product, an achievement indicative of his abilities and efficiency, Hinkle said.

Reinhardt also displays superior technical competence, leads by example, exemplifies the term self-starter, and makes things happen, he said.

As Reinhardt prepares to cover aspects of the Department of Defense firefighting at a conference to be held in August in Denver, Colo., he's also preparing in hopes of being named the Department of Defense Fire Officer of the Year.

In 1992, the Army did not have its own award system, Reinhardt said. It was every nomination versus every nomination. Today, there are regional and Army winners.

"I would like to bring back the top award," Reinhardt said. "I competed for this

award in 1992 and was selected in the top three, but the competition was 'straight up competition' with all the branches submitting numerous nominations for one title."

Reinhardt has served 18 years as an Army firefighter, and he volunteers for the Duke Fire Protection District.

"I've enjoyed being a firefighter. I was a volunteer fighter before joining the Army, and it's just something I wanted to do," Reinhardt said.

Reinhardt said back home, Barker, N.Y., he volunteered as a firefighter. At the time his full-time job was in an electronics company.

"I needed a change, and I wanted to help people and found the Army and firefighting all wrapped in one; the rest is my 18-plus years with the Army," Reinhardt said.

"People run away and out of burning buildings and such, but the firefighter is always running to them," Reinhardt said. "I guess that's why 'we play where the devil dances.'"

Shatara Seymour writes for the GUIDON, the Fort Leonard Wood newspaper. **PWD**

Corps of Engineers' Barger wins 2005 Federal Executive Board award

U.S. Army Corps of Engineers' project manager Cindy Barger received the Federal Employee of the Year Award in the Professional, Administrative and Technical category from the Hawaii Federal Executive Board June 8 during the 49th annual event at the Sheraton Waikiki Hotel.

Barger was nominated by the Honolulu Engineer District for her outstanding work in the successful completion of the Stryker Brigade Combat Team Environmental Impact Statement.

According to Honolulu District Commander, Lt. Col. David E. Anderson, "everyone in the Honolulu District is well aware of Cindy Barger's accomplishments and her role in leading the team that executed the successful SBCT EIS. We are all proud of her. I am thrilled that the rest of the federal family in Hawaii is recognizing her accomplishments, too."

The 2nd Brigade of the 25th ID (L) is in the

process of transforming into an SBCT. Transformation is important because it will provide the Army and the nation with a more responsive, deployable, agile, versatile, lethal, survivable, and sustainable force well suited to meet the defense challenges of the 21st century.

The theme for the Federal Executive Board Awards this year was "Saluting the Best in Hawaii and the Pacific!"

Other Corps' of Engineers Pacific Ocean Division FEB award nominees for 2005 were:

Category	Nominee
Organizational Excellence	Stryker Brigade Combat Team EIS PDT
Clerical and Assistant	Roland Stine
Professional, Administrative and Technical	Cindy Barger (Winner)
Manager/Supervisor	Wayne Yamashita



Cindy Barger receives Federal Employee of the Year Award in the Professional, Administrative and Technical category from the Hawaii Federal Executive Board June 8 at the 49th annual event held at the Sheraton Waikiki Hotel.

POC is Joseph Bonfiglio, Chief, Public Affairs, U.S. Army Corps of Engineers Honolulu Engineer District, (808) 438-9862. **PWD**



PDCS FY06 Training Schedule

The Professional Development Support Center's (PDCS), Installation Support Training Division (ISTD) announces their FY06 training schedule. The ISTD provides Army Department of Public Works (DPW) related training in support of the Installation Management Agency (IMA) and Assistant Chief of Staff for Installation Management (ACSIM), the Army proponent for installations.

Questions or request for additional on-sites may be directed to Ms. Betty J. Batts, Tel: (256) 895-7407, e-mail: betty.j.batts@hnd01.usace.army.mil. To register for any of the courses listed below please contact the PDSC Resistor's Office, Tel: 895-7425, POC: Ms. Sherry Whitaker, e-mail: Sherry.Whitaker@us.army.mil

Course No.& Title	Training Date	Location	Tuition
075 Master Planning	05-09 Dec 05	Portland, OR	\$2,100
075 Master Planning	13-17 Mar 06	Norfolk, VA	\$2,100
075 Master Planning	26-30 Jun 06	Huntsville, AL	\$2,100
101 EA-MILCON	12-16 Jun 06	Huntsville, AL	\$1,260
101 EA-MILCON	8-11 Aug 06	Huntsville, AL	\$1,260
150 Real Property Skills	17-21 Jul 06	Huntsville, AL	\$2,115
214 Space Utilization	26-30 Jun 06	Huntsville, AL	\$1,965
252 1391 Processor	31 Oct-4 Nov 06	Huntsville, AL	\$1,290
252 1391 Processor	5-9 Jun 06	Huntsville, AL	\$1,290
253 1391 Preparation	10-14 Apr 06	Huntsville, AL	\$1,230
253 1391 Preparation	10-14 Jul 06	Denver, CO	\$1,230
286 Real Property Mgmt	07-11 Aug 06	Huntsville, AL	\$1,695
914 Enhanced Use Leasing	13-17 March 06	Huntsville, AL	\$1,200
952 Adv Real Prop Master Pl	17-21 Jul 06	Huntsville, AL	\$2,100
971 DPW IFS Introduction	06-10 Feb 06	Huntsville, AL	\$1,520
971 DPW IFS Introduction	10-14 Jul 06	Huntsville, AL	\$1,520
972 DPW QA	6-10 Mar 06	Huntsville, AL	\$1,050
972 DPW QA	24-28 Apr 06	Huntsville, AL	\$1,050
980 DPW Work Reception	23-25 May 06	Huntsville, AL	\$2,000
981 DPW Budget/JCA	24-28 Jul 06	Huntsville, AL	\$2,100
988 DPW Basic Orientation	16-19 May 06	Huntsville, AL	\$1,525
989 DPWMOC	10-14 Apr 06	TBD, VA	\$2,725
989 DPWMOC	14-18 Aug 06	TBD, VA	\$2,725
990 JOC Basic	7-10 Feb 06	Huntsville, AL	\$1,000
990 JOC Basic	21-24 Mar 06	Huntsville, AL	\$1,000
991 JOC Advanced	2-4 May 06	Huntsville, AL	\$1,000
991 JOC Advanced	20-22 Jun 06	Huntsville, AL	\$1,000
999 DPW Program Mgmt	14-17 Feb 06	Huntsville, AL	\$1,250

CP-18 Career Program Managers Workshop slated for November

The 2005 CP-18 Career Program Managers Workshop will be held in Chicago, Ill., on 1-3 November, at the Chicago City Centre Hotel, 300 East Ohio Street (www.chicc.com). The workshop will be held in conjunction with the Great Lakes Society of American Military Engineers (SAME) Regional Conference.

The emphasis of this year's workshop will be on intern recruitment, training and retention. Please come and help create the tools for developing the next generation of Army leaders. Career program managers, human resource specialists, and interns are urged to attend and participate.

The workshop agenda is being developed and suggestions will be most welcome. More details will be forthcoming via the Public Works Digest and Engineering Knowledge Online (<https://eko.usace.army.mil/index.cfm>).

POC is Edmond Gauvreau, CEMP-CI, HQ USACE, (202) 761-0936, e-mail: ed.gauvreau@us.army.mil. **PWD**

2006 Master Planning training

For 2006, the following Master Planning PROSPECT Courses are scheduled. Please contact USACE Professional Development Support Center in Huntsville/ Ms. Beverly Carr at 256-895-7432 or e-mail: Beverly.Carr@hnd01.usace.army.mil if interested.

Master Planning

Master Planning,
Session 2006-01,
05-09 Dec 05, Portland, OR

Master Planning,
Session 2006-02,
13-17 Mar 06, Norfolk, VA

Master Planning,
Session 2006-03,
26-30 Jun 06, Huntsville, AL

Advanced Real Property Master
Planning Session 2006-01,
17-21 Jul 06, Huntsville, Ala.



Mechanics at Fort Bragg train to meet HVAC challenges

by Dana Finney

Operation and maintenance (O&M) staff at Fort Bragg, N.C., recently fine-tuned their mechanical skills through onsite training sessions tailored to their specific needs for heating, ventilating, and air-conditioning (HVAC) systems. A team from the Engineer Research and Development Center (ERDC) designed and presented three courses based on a site assessment of HVAC equipment and mechanics' levels of expertise.

"The primary driver for this training is that Fort Bragg has a robust Military Construction program, so we're constantly buying new equipment," said Judi Hudson, DPW Deputy Director at the fort. "Especially in the HVAC field, the systems are always evolving, so we need to keep our in-house staff up to date and continuously develop their skills."

In addition to new equipment coming online, Fort Bragg, like almost every other Army installation, has many aging and failing HVAC systems and controls along with varied and complex technologies where retrofits have been installed. With some 4,625 buildings, each of the 20 mechanics is responsible for O&M in about 240. The number and wide variety of old and new controls present a daunting challenge for the maintenance staff.

At Hudson's request, ERDC's Construction Engineering Research Laboratory (CERL) initially visited Fort Bragg to meet with Facility Maintenance Division staff and survey selected mechanical rooms. Working with Steven Dunning, maintenance mechanic leader in the division, the team identified training topics and devel-

oped course materials that would be presented in conjunction with field instruction. For the classes, the CERL team was augmented by an instructor "on loan" from the Fort Hood, Tex., DPW.

"It was much more useful for the mechanics to have hands-on labs that are tailored for what we have here – the equipment that they work on every day. That was a big help versus having an artificial lab set up on piece of plywood," said Dunning.

Collaboration with Fort Bragg's staff produced three courses:

- Introduction to HVAC and Control Systems O&M (2 days)
- Advanced HVAC Control Systems O&M I (1 week of half-day sessions)
- Advanced HVAC Control Systems O&M II (1 week of half-day sessions)

"The advanced courses were scheduled for half days to avoid tying up the maintenance staff for the entire week," said David Schwenk, project manager in CERL's Energy Branch. "The training is similar to that which we have provided under the Corps of Engineers PROSPECT program for several years, with a site-specific, hands-on emphasis. In advanced course I, the focus is on single-loop digital controls while in the second advanced course, we discuss 'generic' direct digital control systems. Our intent is to make this training available to others through the PROSPECT exportable training program."

According to Hudson, "By having our people in a classroom setting together, with open communication facilitated by an expert, you're really able to take advantage of the knowledge that they have, and they can share this information. It's a comfortable situation where they can interact with each other. In addition, having a relationship with CERL provides a continuing resource – unlike where you go to an outside training course, sit through the lectures, then take your workbook and go home."



Does this look like your shop? Each laptop controls a different HVAC product line.

"The breaks between the three courses gave mechanics the opportunity to go into the field with what they learned from the previous course, practice what they learned on the actual equipment being repaired and address any questions or concerns that arose from the practice at the next session," Dunning said. "I feel this was as powerful a learning tool as the course itself."

The Fort Bragg training was interspersed with strategy development sessions intended to identify site-specific problems and solutions. These included several mini-strategy sessions with the mechanics, culminating in a 4-hour strategy meeting with the Corps District and Area offices, Directorate of Information Management, Facility Maintenance Division staff, and maintenance mechanics. This session included a presentation on a proposed "Direct Digital Control O&M Management Methodology" and a "Building Acceptance Checklist" along with suggested Installation Design Guide updates. The CERL team produced a report documenting this information.

"I intend to have a long-term training program to bring CERL and manufacturers onsite as opposed to sending people somewhere else," said Hudson. "This training experience greatly exceeded my expectations. We were also given recommendations for how we can develop and implement an ongoing training plan."

Other installations have similarly brought experts to their sites to provide customized training courses. For more information, please contact David Schwenk at 800-USA-CERL, ext. 7241, d-schwenk@cecer.army.mil.

Dana Finney is a public affairs specialist at ERDC-CERL, Champaign, Ill **PWD**



Fort Bragg's training emphasized hands-on field practice.



Corps offers certified unexploded ordnance training on Big Island

by Dino W. Buchanan

The U.S. Army Corps of Engineers is offering a five-week training course for Big Island residents to assist in the safe detection, location, identification and disposal of unexploded ordnance (UXO).

Residents applying for one of the more than 20 available training billets can graduate as a certified unexploded-ordnance technician Level 1 and be eligible to apply for jobs in connection with the Formerly Used Defense Sites (FUDS) program, including the cleanup at the 135,000-acre Waikoloa Maneuver Area on the island of Hawaii. Entry-level unexploded-ordnance technicians usually earn about \$15 to \$20 per hour.

The training course is being offered through Texas A&M University. The Honolulu District FUDS program is currently in a five-year, \$50 million contract awarded to American Technologies Inc. for removal of the UXO in the Waikoloa and Waimea areas. The intent of the training is to improve awareness of potential risks from unexploded ordnance among community members and to have trained individuals ready locally as jobs become available throughout the course of this contract and other future FUDS work.

A formal schedule for the training has not been made but will be determined once potential trainees have been selected by the Honolulu District. A number of qualifications must be met to be eligible for training including a physical examination, finger printing and a police background search. Selection of potential trainees shall be completed by August 2005. Training could start before the end of the year or the very beginning of 2006 in either in Hawaii and / or Texas. Trainees will not receive a salary during the five-week period, but all travel, lodging, food and training expenses will be paid. Employment afterward is not guaranteed.

The Waikoloa FUDS project was expanded from 123,000 acres to 135,000 acres last year after undeveloped land between Queen Kaahumanu Highway and the shoreline was determined by the Corps to be of concern.

Live ordnance found in the area includes

grenades, bazooka rounds, artillery and mortar rounds, land mines, and hedgehog missiles. At least six people have been killed or injured by old artillery rounds since the 1940s and there have been more recent events in which UXO was found near schools or uncovered by children at play. So far, around 650 live rounds have been recovered with no injuries to staff or residents.

The Waikoloa FUDS area received a top risk assessment rating because of the 20,000 or so people who live and work within the project's boundaries and the large number of tourists frequenting the area.

Ordnance clearance was started in late January 2004 and is continuing through the present time. Thus far over 3,000 acres of land have been cleared of unexploded ordnance in lands bordering neighborhoods in Waikoloa Village, Waimea, Lalamilo, and Ouli.

Throughout the UXO cleanup, crews on the Big Island are developing new methods to detect and clear ordnance which have been adopted at other sites around the country. Some are as low-tech as sandbag enclosures built in such a way as to eliminate most of the concussion and fragmentation from a detonation.

"We've been able to cut down the 'frag zone' to the point where we can pretty much guarantee safety to 200 feet," according to Chuck Streck, Waikoloa FUDS project manager for the U.S. Army Corps of Engineers - Honolulu Engineer District.

Streck says subsurface ordnance detectors have been refined to a point where they now distinguish between a pipe or other debris and a piece of ordnance, without requiring workers to dig it up. This results in crews now clearing 35 percent to 40 percent more ground than before.

The area's rough terrain still requires use of hand-held detection devices or a "towed array" mounted on a cart and pulled by workers.

"There's no other way to do it. It's too rough," says Streck. "But with the detection refinements and potential of added manpower we are on schedule with the

Waikoloa FUDS cleanup."

For more information on the UXO training course, please contact Clayton Sugimoto of Wil-Chee Planning Inc. at (808) 596-4688 or e-mail: wcp@lava.net or Chuck Streck of the U.S. Army Corps of Engineers at (808) 438-6934, or e-mail: Chuck.F.Streck@poh01.usace.army.mil.

For information on the Waikoloa Maneuver Area Unexploded Ordnance Project, please visit http://www.poh.usace.army.mil/proj_env_waikoloa.asp.

POC is Dino W. Buchanan, (808) 438-9862.

Dino W. Buchanan is a public affairs specialist in the Public Affairs Office, Honolulu Engineer District, Fort Shafter, Hawaii. **PWD**

ISTD offers DPW Management Orientation course

The Installation Support Training Division (ISTD), in Huntsville, Ala., has vacancies in the following training course session:

CRS # 989, DPW Management Orientation (DPWMOC) Course Session 2005-02

Dates: 15-19 August 2005

Location: Alexandria, Va.

Tuition: \$1,200

(Note: The Length of this course has been changed)

To register for this course session, please call Sherry Whitaker, Registrar, at (256) 895-7425 or send fax to (256) 895-7469. Credit Cards are accepted for this course session.

For questions on this course, or for an on-site training session at an installation, please contact Beverly Carr, Course Manager, (256) 895-7432. **PWD**



Fire and Emergency Services Conference coming up

The 2005 DoD/International Association of Fire Chiefs (IAFC) Fire and Emergency Services (F&ES) Conference will be held in Denver, Colo., 11-16 August 2005. This joint conference is endorsed by the Principal Under Secretary of Defense, Acquisition, Technology, and Logistics and is being held with the IAFC to leverage training requirements and to simplify logistical arrangements.

The key topics are F&ES's response to WMD, mass casualty events, hazardous materials/Global War on Terrorism/Chemical Biological, Radiological, Nuclear, and High-Yield Explosive (HAZMAT/ GWOT/ CBRNE) training/safety, and federal/state/local government coordination on emergency operations.

Army is Project Manager for this year's DoD activities. DoD Day speakers will include: Mr. Bill Killen, incoming president of the IAFC and Holston AAP fire chief, who will give the welcoming address; Mr. R. David Paulison, U.S. Fire Administrator, with keynote address entitled, "DoD's "First Responder Role" in the National Incident Management System (NIMS); Mr. Gil Jamieson, Acting Director, NIMS Integration Center, will review status of the National Response Plan mandated by Homeland Security Presidential Directive-5; Fire Chief Jason L. Read, inspirational speaker and gold medalist in 2004 Olympics, will present, "You don't win silver, you lose gold;" and the concluding speaker will be Denver, Colorado, Fire Chief Larry Trujillo, who will present his new fire fighter safety program called, "Everybody goes home."

For the first time since the conference began ten years ago, the DoD/IAFC conference has received national recognition through an April 2005 interview by *Fire Chief* magazine with Mr. Bruce Park, Director of Army Fire and Emergency Services. *Fire Chief* magazine is a publication of the Interna-

tional Association of Fire Chiefs.

The DoD events are highlighted by a DoD Awards Banquet on 16 Aug 05 where DoD's "best of the best" will be recognized. Army nominees for these awards are:

Fire Department of the Year: *Fort Bliss, Texas*

Civilian Fire Fighter of the Year: *Mr. Richard Smith, Fort Lewis, Wash.*

Military Fire Fighter of the Year: *SPC Benjamin S. McLellan, Fort Lewis, Wash.*

Civilian Fire Officer of the Year: *Mr. Joseph A. Hightower, Anniston Depot, Ala.*

Military Fire Officer of the Year: *SFC Wayne Reinhardt, Fort Leonard Wood, Mo.*

Heroism (Team Award): *Fire Chief Edward C. Budnick, and Fire Inspectors Robert M. Farrell, Sr., and Thomas S. Stanford, Aberdeen Proving Ground, Md.*

Army also conducts an "Army Day" and each IMA region holds sessions with their respective fire chiefs to discuss key staffing, equipment, and consequence management issues. Army also holds a separate Awards Luncheon prior to the DoD Awards ceremony. Fire Chiefs' participation in this unique annual forum will keep them abreast of latest Army policies and programs and Army recognition of the superior self sacrifices made by our F&ES "first responder" community.

Lieutenant General David W. Barno, ACSIM, and Mr. Joe Whitaker, DASA (I&H), will be invited to attend the conference. Fire chiefs and senior representatives from 150 installation/garrison fire departments, some garrison commanders, regional and HQ F&ES managers are also expected to attend.

POC is Bruce A. Park, (703) 602-5805 DSN 332, e-mail: bruce.park@hqda.army.mil.

Bruce A. Park is the Director of Army Fire and Emergency Services, Facilities Policy Division, OACSIM. **PWD**

Mark your calendars for the Energy 2005 and Army Energy Forum

Energy 2005 "The Solutions Network," the eighth annual training workshop and exposition jointly sponsored by the Department of Defense, Department of Energy and General Services Administration will take place 14-17 August 2005 in Long Beach, California. Energy 2005 will bring 1,500 federal, State, local and private sector energy managers, energy services companies, utilities, procurement officials, engineers and other energy professionals together to learn, network and discuss the hot energy topics of today. The exposition will provide an opportunity to visit more than 100 technical exhibitors that will be present to provide information on their services and products.

This year's program includes over fifty individual sessions in tracks on operations and maintenance, project financing, strategies, new technologies, renewables, energy security and sustainability. Pre- and post-workshop training will also be available in conjunction with Energy 2005, to include the week-long certified energy manager training course. Full details are at the Energy 2005 web page at <http://www.energy2005.ee.doe.gov/>.

The Office of the Assistant Chief of Staff for Installation Management will conduct an Army Energy Forum 18-19 August, following Energy 2005. All Army energy managers are encouraged to attend. This year's agenda includes discussion of the new Army Energy Strategy and Campaign Plan, and presentation of the 27th Annual Secretary of the Army Energy and Water Management Awards. Army energy managers can register at <http://armyenergy.pnl.gov/forum.stm>. There is no registration cost for the Army Energy Forum.

For additional information on Energy 2005 or the Army Energy Forum, please contact Jim Paton at (703) 601-0364 DSN 329 or e-mail: james.paton@hqda.army.mil. **PWD**



Engineering Knowledge Online connects Army's virtual Installation Support team

by Dana Finney

Geographically dispersed Installation Support team members have gained a powerful tool to help manage their day-to-day business while staying on top of new developments in the field. The Engineering Knowledge Online (EKO™) Portal — <https://eko.usace.army.mil> — hosts both public and secure pages to foster collaboration and provide links to critical resources.

The EKO™ Portal is a Corps of Engineers knowledge management tool originally developed for the Installation Support Community of Practice (CoP) that now serves the entire Army engineering community. A “portal” differs from a stationary web site in that it allows users to post their own information, provides searchable links to millions of web sites, and enables an almost limitless number of applications to be launched.

“In a previous job, when I needed to have something posted on the web, I had to go to the webmaster, who was always overwhelmed, and it would sometimes be 6 months before the information got out,” says John Grigg, program manager for the Access Control Point Equipment Program (ACPEP) at Huntsville Engineering and Support Center (HNC). “I almost resorted to bribery.”

In addition to requiring a webmaster's skills for posting, these sites tend to have the content managed according to institutional business paradigms, where knowledge belongs to an organization and not a business area.

“When installation managers were looking for information, they first had to understand the Corps' organizational hierarchy. For example, to find information about protective design, they had to know that an Omaha District exists,” says Chuck Schroeder, project manager at the Engineer Research and Development Center (ERDC).

Grigg and Schroeder have led a multi-agency effort to create the EKO™ Portal as a means to facilitate information sharing

within the Army engineering community. The need for a portal capability first emerged when the Center for Public Works (CPW) closed. Installation support experts were to be moved to Regional Business Centers and other field agencies. Kristine Allaman, who leads the Installation Support Community and was Director of the former

Installation Support Division at Corps headquarters, promoted this concept after ERDC's Construction Engineering Research Laboratory (CERL) briefed her on how to use portals for knowledge management.

According to Grigg, who was with CPW at the time, “We were going to be scattered all over the place, but needed to stay connected to a central team because of all the institutional knowledge in our group. Most problems in the DPW world have already been solved, but how do people get the solutions?”

Grigg moved to Louisville District and soon became involved with a Fort Campbell initiative to rebuild the information technology (IT) capability for its DPW. This experience in dealing with IT issues at Campbell led to a partnership with Schroeder, and the two began a collaborative process with virtual teams across the Army to connect installation support professionals. This knowledge management effort eventually became the basis for the EKO™ Portal, originally called “Installation Knowledge Online.”

Among the EKO™ Portal's user-friendly features:

- Hosts both public and secure pages, using



Workers install closed-circuit TV at a guard house in Heidelberg under ACPEP. Sponsors can view up-to-date program status on EKO.

authentication through AKO accounts which are required for all Department of the Army (DA) employees.

- Easily customizable page layout and use of numerous programs.
- No Web development expertise needed to manage pages or content.
- Web-based collaboration for workgroups.
- Optional email alerts when something new of interest has been posted.

The EKO™ Portal today is growing exponentially, partly due to the changing culture within the Corps. “We want to encourage everyone in the environmental community to register on the portal, which is open and available for sharing information — with only some minor oversight to ensure we don't become a data junkyard,” says Ken Gregg, team leader for the environmental CoP at Corps headquarters. “Rather than use EKO as a method of tasking people to do things, we want it to motivate them and make them feel empowered to lend their expertise to help improve the way the Army and the Corps do business.”

Underlying the success of the EKO™ Portal is the way in which it evolved: by first understanding the DPW function, then mapping the process, and finally adapting technology to not change,



(continued from previous page)

but streamline, knowledge management. The EKO™ Portal's development has been a constant collaborative effort. Leading the charge, Grigg brought many years of installation DPW experience to EKO's development, while Schroeder is an expert in web-based knowledge management tools. "We call ourselves 'bubba and the professor,'" Grigg laughs. "And I'm not the professor."

The EKO™ Portal is providing the framework for connecting numerous virtual teams, including those responsible for critical Army missions.

Army Transformation and BRAC

Sally Parsons is one of those public servants who can't seem to take on enough work. As a program manager (PM) at HNC in the aftermath of Sept. 11, 2001, she was charged with heading up a program to help secure entry points at Army installations along with an already full workload. Called the Access Control Point Equipment Program (ACPEP), this effort had been tasked to the Corps from the Office of the Provost Marshal General (OPMG).

Parsons suggested using the emerging EKO™ Portal to help manage the program and began working with Grigg, who later took over the ACPEP program. That was because, meanwhile, Army Transformation was gaining momentum, and the Corps needed to respond. Parsons was assigned as PM for Transformation missions including Army Modular Force/Stationing Actions, Military Construction (MILCON) transformation, and later, Base Realignment and Closure (BRAC) support.

"When you're making major changes to a program, there is an increased need for information exchange so that people can separate rumors from what's real," said Parsons. "With the accelerated pace and interim gap in guidance, people didn't understand the rules for acquiring temporary facilities and who they could contact for help with other issues such as economic analyses."

Enter the EKO™ Portal and a customized site for bringing together all the players in these important functions. "We're working with the Installation Man-



Multi-agency team members collaborate using EKO to manage the Army Modular Force/Stationing Actions mission under Army Transformation.

agement Agency [IMA] to ensure that requirements analysis and planning charrettes for Army Modular Force structures are uniform and meet standards set by the Assistant Chief of Staff for Installation Management [ACSIM]," she said.

The EKO™ Portal automates Parson's communication, scheduling and reporting functions, while allowing other features such as a dynamic calendar, threaded (and captured) discussions, and workflow organized by IMA regional office. It culls information from requirements analysis, DD 1391 development and planning charrettes when an installation will be receiving new Brigade Combat Teams.

"EKO helps us coordinate and get information out to people," Parsons says. "It's also helping us share what we've learned from six industry forums in terms of how you can reduce construction time by up to 50 percent using industry standards."

ACPEP Project Delivery Team

The Office of the Provost Marshal General (G3) sponsors the ACPEP, which has as its goal improving physical security and personnel safety at Army installation access control points (ACPs) worldwide. The \$335 million program has three phas-

es: (1) providing mobile equipment, (2) surveying all Army installation ACPs, and (3) purchasing and installing fixed ACP equipment based on the surveys' findings.

Grigg leads a team of some 100 members, all linked through the EKO™ Portal, representing HQDA (OPMG and ACSIM), USACE, IMA, installation DPWs & DESS, and MACOMs. "The three phases were funded at \$163 million in direct response to 9/11," he says. "The way we're conducting the program is a new concept for the Corps. Because of the worldwide scope and relatively short planning and execution schedule, the most efficient strategy was to centralize the program management but to decentralize the execution." HNC is centrally managing ACPEP while the Districts complete the work in their regions.

One of the most useful features within the EKO™ Portal is called STATREP, which is an automated database for the entire program. "We used to have ten or twelve data calls every day because the sponsor's staff needs to track the progress. A lot of what they wanted was not available in PROMIS. Now everything they want to see is posted on EKO and they have access rights to view it. They can see reports specific to regions – for example, they can click a button and see how many closed-circuit TVs are at Fort Bragg," says Grigg.

Besides STATREP's Project Status Database, it contains an Issue Tracker. This feature gives communities and teams the ability to manage open issues and view the history of resolved issues, says Schroeder. The EKO™ Portal also has an advanced search feature for some 250,000 documents within the portal and can search five installation management related websites – ACSIM, IMA, USACE Military Programs, HESC, and CERL.

For more information about the EKO™ Portal, please contact Chuck Schroeder at CERL, 217-373-6726,

Charles.G.Schroeder@erdc.usace.army.mil or John Grigg at HNC, 256-895-1697, John.W.Grigg@usace.army.mil.

Dana Finney is a public affairs specialist at ERDC-CERL in Champaign, Ill. **PWD**



Building technological bridges from opposite ends of the world

by Angela Dickson and Tad Britt

Engineering and environmental professionals alike face the arduous task of acquiring data and effectively integrating it into operations and decision-making on a routine basis. Data collection tools are available commercially, but are typically designed for a specific purpose and are functionally limited with a lack of integration capabilities.

Two independent inventions from across the globe could change all that: one — a data capture device, the other — a business process for data analysis and reporting. Together they would form a revolutionary hybrid system, integrating the collection and subsequent organization of high-resolution data.

It began at the Engineer Research and Development Center's Construction Engineering Research Laboratory (ERDC-CERL). Senior researcher Tad Britt had just completed initial testing of the Automated Resource Management System (ARMS™) - a handheld ruggedized computer integrating a geographic information system data recordation program with high-resolution digital instrumentation. "There had to be something else out there," he said. "A similar competitive technology or one that could prove mutually beneficial." After a brief internet search, that is exactly what he found.

More than 8,000 miles away at Surveylab, New Zealand, personnel were perfecting their own independent invention, the ike 300™ - an all-in-one solution to data capture and asset management in the field, comprising multiple integrated hardware components, including GPS receiver, digital camera, laser distance meter, digital compass, inclinometer and pocket PC computer.

Britt immediately contacted Surveylab in the hope of exploring the integration of the two systems, and the results speak for themselves—the Hand-held Apparatus for Mobile Mapping and Expedited Reporting (HAMMER™). "This was validation of our new product concept and a huge opportunity for us to get visibility within a major organization," Tony Thistoll, marketing and sales, Surveylab, said.



An exclusive feature of the HAMMER™ is the ability to capture the user's position as well as the calculated GPS coordinates for the target location simultaneously.

HAMMER™ allows data to be captured digitally and reports can be generated on demand. What used to take days, weeks or months using conventional methods can now be transmitted over the internet the very same day, allowing the user to act proactively and remediate situations while in the field. This enhanced business process also allows the user to share with stakeholders how data was collected, analyzed and to demonstrate the decision-making process objectively. "ERDC brought knowledge of a specific application - archaeological surveying - and Surveylab brought the hardware," Leon Tourenburg, chief technical officer, Surveylab, said.

After a project is initiated and criteria are identified, digital forms and GIS coverages are uploaded to the unit. The application guides the user through various steps with menus consisting of drop-down lists, minimizing the time to answer a question. With each form, links are provided for off-line access to pre-loaded, digital reference guides to aid the user in the field. Each form is versatile and can be customized for unique situations.

Also, a generic form is included in every



The HAMMER™ cooperative research and development agreement between ERDC and Surveylab combines the logic of the ARMS™ software capabilities with the portability and the functionality of the ike 300™.

application to manually enter data for unanticipated circumstances. A key feature is a single pushbutton activating a number of automated and time-saving measurements at once—a "snapshot" with a time/date stamp simultaneously applied to the entire data set. Basically, the operator aims the unit at the target and presses the record button, which captures a digital image; obtains GPS positioning, azimuth, distance, elevation, inclination and other metric attributes; and then stores the data in a database with a time/date stamp and unique project/identifier attached.

Data is collected and stored on a 1-GB flashdrive which allows for immediate recall and the ability to upload reference reports, field manuals, photographs, maps, etc. for on-board reference. Finally, the collected data are downloaded to both a GIS and a normalized, relational database on the desk/laptop running Microsoft



Enterprise Architecture for Army Unaccompanied Personnel Housing

by Wendy McIntosh and Ivor MacFarlane

The Unaccompanied Personnel Housing (UPH) Branch of Army Housing Division is documenting the current and future business practices of the UPH program to identify Web-based software to replace the many systems and spreadsheets currently used to manage UPH spaces. This system is planned for worldwide deployment to support all UPH processes including waitlists, making offers, assignment, conducting inspections, tracking maintenance and occupancy reporting. The replacement system is expected to provide an easy-to-use UPH management system that is readily available to all installations via the Web. It will also support centralized management of UPH facilities, as well as, provide more accurate and timely reports from various hierarchies, and vertical levels.

Electronics Data Systems Corporation (EDS) and UPH, with the assistance of a variety of housing and information technology personnel representing the various headquarters, installation management and personnel worldwide, have developed a requirements document that will be sent to

potential software vendors. UPH has requested vendors to provide samples of their software products that meet the developed requirements. We anticipate the results of this initial phase of the selection process will be available by the end of June and a selection of vendor to be accomplished once total program funding is secured.

The project associated with development of the UPH requirements document began in February of 2005. The following key activities have been accomplished to ensure the requirements accurately reflect the desires of both the headquarters and the installation personnel both for today and in the foreseeable future:

- Created a UPH User Group team with representatives throughout the world to review requirements and other supporting documents developed by EDS.
- Conducted Web-based reviews of a preliminary requirements document together with other documents that reflected the current or "as-is" UPH environment. These additional documents were instrumental in helping define requirements,

and included documentation of the key activities performed by UPH/Barracks Managers, as well as system interface documents.

- Conducted Web-based reviews of the "final" requirements document that included future as well as current requirements. This "final" requirements document was the basis for the UPH Requirements Document recently sent to software vendors for responses as described earlier in this article. As before, documentation of the future or "to-be" key activities as well as future system interfaces were reviewed in support of reviewing the requirements.

For more information, please contact Wendy McIntosh, (703) 601-2499 or e-mail: wendy.mcintosh@us.army.mil.

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Office™ and ArcGIS™ software.

HAMMER™ has been used on three specific studies during the past year. The first was at the Elwood Ordnance Plant in Joliet, Ill. to identify areas with trinitrotoluene contamination. "The demonstration was a testimony to time savings by enabling the rapid mapping of over 90 buildings and 60 sanitary and storm manholes in less than 60 working-hours," explained Britt.

Soon after, the HAMMER™ was used at the Chicago Sanitary Ship Canal in Ill. to georeference and track sensors placed under a moving watercraft in order to record voltage emitted from an underwater electrical fish barrier. In yet another application, CERL ordered a survey of the Cape Canaveral lighthouse, which currently stands about one mile west of the original construction. HAMME™ was

loaded with historic map data and researchers used the projected location to identify the buried brick foundation and outlying structures.

"HAMMER™ has seemingly endless uses," Tourenburg explained. "We are eager to customize it to fulfill a specific niche."

"The Corps of Engineers brought the operational vision and how the end-to-end business process worked," Thistoll said. "Our focus had been and still largely is around the physical design and performance of the handheld systems and the user requirements in the field. ERDC-CERL drove the wider application and business process of HAMMER™."

With a patent pending, Britt and other CERL researchers will continue to work with Surveylab to continue the modification and improvement of the HAMMER™. "Our vision is a HAMMER™ in every Hummer and we are already working on the

development on next generation units to meet this requirement," Thistoll said.

It has been a truly synergistic experience with each party bringing their own expertise and perspective to the table, and we have fielded a much more powerful data capture system as a result," Thistoll said.

"The possibilities are endless," Britt said. "The ability to capture solution-oriented data in a logical, consistent manner, conduct sophisticated analysis and present meaningful results at the end of the day would simply revolutionize the way environmental and engineering professionals do business."

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PWD



Yun Heo

Public Works Division
Installation Management Agency

Upon finishing elementary school in Seoul, Republic of Korea, Yun Heo emigrated with his family to the U.S., and grew up in the Baltimore, Maryland, area. He graduated from the Virginia Military Institute in 1984 with a degree in civil engineering, and is pursuing a master's degree in human relations from the University of Oklahoma.

"I chose the human relations field because it teaches you how to deal with all types of people," Yun explained. "Too often, what you see is not always a correct assessment of a person's work attitude. Education gives you the chance to look deeper and beyond any negative attitude and apply what you have learned on a daily basis. This was particularly true for me on some of my previous jobs where people of many different nationalities and backgrounds had to work together. The cultures may be very different but people are basically the same. It helps to see the similarities," Yun added.

In 1984, commissioned a second lieutenant in the Air Force, Yun set out on his first assignment as an engineer officer at the Robins Air Base in Georgia. "I started as a project manager working on civil projects such as a warehouse with mechanical and electrical systems," said Yun. "Most of my Air Force career was spent in the facilities engineering career field including housing."

During those 10 years with the Air Force, Yun found it challenging to work with other branches of Services and host nations. In Berlin, while stationed at the Templehof Air Base, for example, he was the chief of the Operations and Maintenance Division with 280 people of 18 different nationalities on an installation going through the painful process of base closure. The job required continuing maintenance services until the base actually closed.

It was extremely difficult to motivate the employees," recalled Yun. "There was a huge increase in safety-related incidents, mainly vehicle accidents, which, however



Yun Heo

minor, were indicative of employee job insecurity. I also had to hold conferences with the local union leaders to discuss what training was now necessary to make our skilled workers more employable in other areas."

Yun went back to Korea twice. In 1992-95 he was at Osan Air Base as the chief of Engineering. Upon arrival, he noticed that Korea was not the Korea he remembered from 1974. Everything was modernized, especially transportation. He was also pleased to discover that the country had not forgotten Americans and their role in the Korean War.

During Yun's tenure in Osan, the biggest construction program in the base's history was taking place with over 180 contract projects. Yun was in charge of managing the program from cradle to grave—from project programming to design to project management to construction.

In 1994, it was time to decide whether he wanted to stay with the Air Force or move on. Yun decided to leave and took a civilian job with the Army in Korea. "The Army provides ample opportunities for training and a chance to advance in different areas," he said. "My civilian Army career is a matter of choice, not assignment like with the Air Force."

Yun spent nearly a decade (1995-2004) in Korea as a civilian. The first year, he was

the staff engineer for the 19th TAACOM in Taegu conducting command inspections. By 1997 he moved to Uijeongbu Garrison as the chief of the Buildings and Grounds Division. A record-setting rain flooded Camp Red Cloud, covering the installation in mud 2-feet-high, and Yun was put in charge of recovery operations.

From 1998 to 2004, Yun was at Yongsan Garrison DPW as the chief of Buildings and Grounds. In addition to his division's normal duties, he was kept busy taking care of 16 general officers, many having different expectations and providing different challenges. "For example," explained Yun, "General Thomas Schwartz wanted to enhance the landscaping on the entire base with a 'Points of Pride' program, especially the community areas used by Soldiers and their families. Trying to do this by contract would have cost an enormous amount of money, but my Division took on this project and we accomplished it to the general's and community's satisfaction."

Yun joined the Installation Management Agency (IMA) in November 2004 to work on the Transportation Infrastructure Program. His new environment is very different from operations and maintenance where he had skilled craftsmen performing day-to-day work. At IMA, he liaisons with Regional counterparts to execute Army policies on vertical and horizontal structures. He hopes to set up staff assistance visits for inspection of bridges, dams, airfields and railroad programs on Army installations. So far he has visited the Northeast and Southwest Regions and the Center for Technical Expertise at the Waterways Experiment Station in Vicksburg, Miss.

"In the near future, I hope to build a team of program managers at the Regional level to provide effective guidance to installations to ensure sound transportation infrastructure," Yun concluded.

An avid golfer, Yun resides in Virginia with his wife and small daughter. He may be reached at (703) 602-2416 or e-mail: Yun.Heo@hqda.army.mil. **PWD**



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